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Ministry of Agriculture and Food

Province of British Columbia

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To Colonel the Honourable
HENRY P. BELL-IRVING, D.S.O., O.B.E., E.D.
Lieutenant-Governor of the
Province of British Columbia

MAY IT PLEASE YOUR HONOUR

I have the honour to submit for your consideration the Annual Report of the Ministry of Agriculture and Food for the year 1982.

H. Schroeder
Minister of Agriculture and Food

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Report of the Deputy Minister

To the Honourable Harvey W. Schroeder,
Minister of Agriculture and Food

Sir:

I am pleased to present the 1982 Annual Report of the British Columbia Ministry of Agriculture and Food. This report summarizes activities of your ministry for the twelve months ending December 31, 1982.

Economic conditions during 1982 in virtually every sector of the British Columbia economy required that government exercise extreme care and restraint in the delivery of services and programs. Ministry of Agriculture and Food staff carried this out with diligence and dedication within the spirit of minimizing expenditures and yet providing programs to the fullest extent possible. As a result, 1982 was an extremely challenging year for your staff.

In order to make best use of existing staff in light of hiring restraints, the ministry was restructured and streamlined particularly at the administrative levels. Certain branches were re-allocated in their reporting relationships according to function and mandate. This was seen as a positive move in the ministry's service to the agriculture and food industry given the financial and personnel limitations that must be shared throughout government.

Despite the fact that other sectors of the provincial economy experienced downturns, the agriculture and food industry maintained its growth trend thus exemplifying its inherent stability and contribution to the provincial economy and to the well-being of all British Columbia citizens. Many producers suffered from lower returns and higher production costs; however, farmers and ranchers generally weathered the economic storm significantly better than many others in the provincial economy. Ministry programs and services played a marked contribution to this stability.

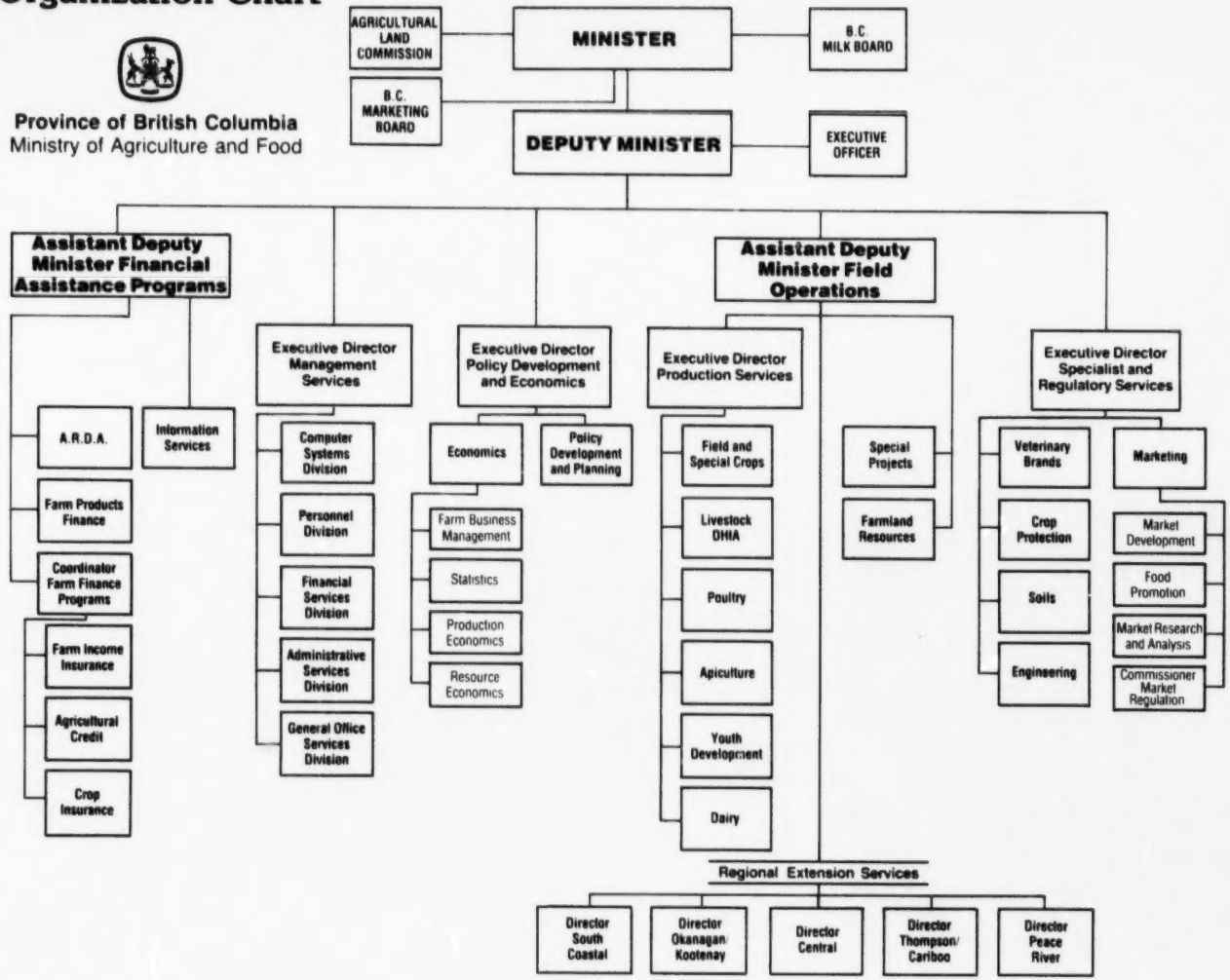
It has been my distinct pleasure to serve this industry over the past three decades and particularly as Deputy Minister during the past eleven years. It is my sincere hope that agriculture will continue to be a hallmark in the growth of British Columbia as a result of these efforts and particularly those of the dedicated staff of this ministry.

Respectfully submitted,

S. B. Peterson
Deputy Minister of Agriculture and Food

Organization Chart

Province of British Columbia
Ministry of Agriculture and Food



Ministry Executive and Directors

1982

Minister	**Hon. James Hewitt (until Aug. '82)**	**Hon. Harvey Schroeder**
Deputy Minister		**S. B. Peterson**
Assistant Deputy Minister Financial Assistance Programs		**I. C. Carne**
Assistant Deputy Minister Field Operations	**E. M. King (retired April '82)**	**Dr. G. A. MacEachern**
Executive Director Management Services		**J. Newman**
Executive Director Policy Development and Economics		**D. M. Matviw**
Executive Director Production Services		**M. G. Oswell**
Executive Director Specialist and Regulatory Services		**R. J. Miller**
Regional Director Central		R. N. Kohlert
Regional Director Okanagan-Kootenay		B. A. Hodge
Regional Director Peace River		B. E. Baehr
Regional Director Thompson-Cariboo		A. N. Isfeld
Regional Director South Coastal		W. E. A. Wickens
Agriculture and Rural Development (ARDA)		J. R. Steele
Agricultural Credit		M. K. Thompson
Apiculture		J. Corner
Crop Insurance		P. R. Humphry-Baker
Crop Protection		J. C. Arrand
Dairy		D. J. Blair
Economics		A. B. Lauder
Engineering		T. A. Windt
Executive Officer		P. H. Pettyfer
Farm Finance Programs (Coordinator)		B. A. Hackett
Farm Income Insurance		R. Jarvin
Farm Products Finance		J. B. Phillips
Farmland Resources		J. D. Anderson
Field and Special Crops	J. V. Zacharias (retired March '82)	W. Weibe
Horticulture (branch mandate moved to Regional Extension Service Aug. '82)		A. C. Carter (until Aug. '82)
Information Services		R. A. Sera
Livestock		J. A. Pelter
Marketing		D. A. Rugg
Poultry		Dr. H. C. Carlson
Property Management		B. R. Richardson (retired June '82)
Soils		R. S. Bertrand
Special Projects		A. C. Carter (appointed Aug. '82)
Veterinary		Dr. R. J. Avery
Youth Development		D. E. Freed

Distribution of Farm Cash Receipts, 1982

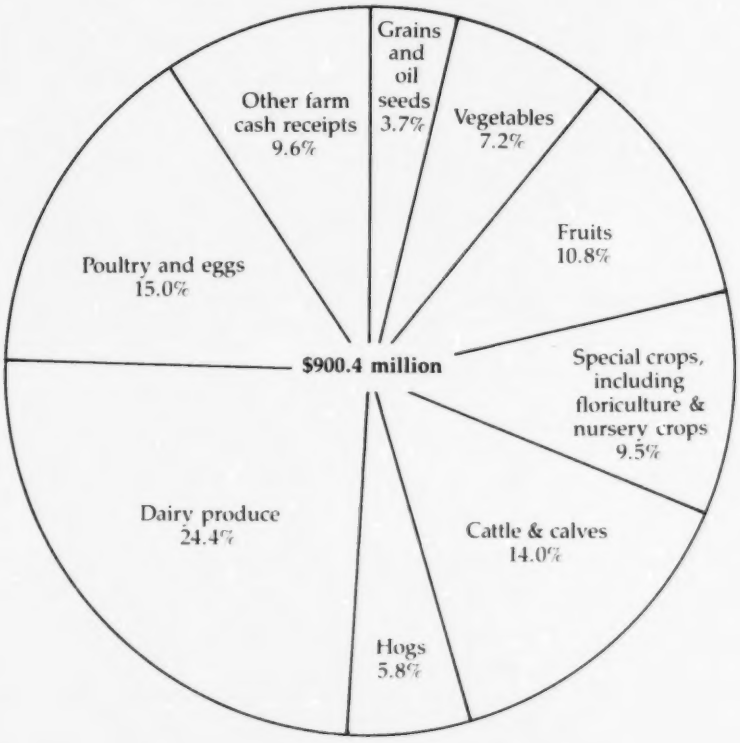


Table I Distribution of Farm Cash Receipts, 1982—British Columbia

	$ Million	Per Cent
Grain and oilseeds	32.8	3.6
Vegetables	58.2	6.5
Fruits	92.1	10.2
Specialty crops, including floriculture and nursery crops	84.4	9.4
Cattle and calves	122.8	13.6
Hogs	51.9	5.8
Dairy products	217.1	24.1
Poultry and eggs	143.8	16.0
Other farm cash receipts	97.3	10.8
TOTAL FARM CASH RECEIPTS	900.4	100.0

Source: Statistics Canada, December 1982

1982 Agricultural Review

Farm Cash Receipts (Tables I and II)

British Columbia's farmers produced and marketed a slightly higher value of farm output in 1982 than in the previous year. Farm cash receipts reached a record level of $900.4 million, 4.2 per cent above that recorded in 1981.

A hot, dry summer and early fall combined with declining grain prices (the result of bumper world supplies) to lower grain production and receipts. Grain cash receipts fell $22.9 million, a 41 per cent decrease from the year before. In the Peace River region, although the total land area in grain and oilseeds was higher than in 1981, the plantings of barley decreased substantially, and wheat, rye and hay yields were down from the previous year.

Vegetable production levels recovered significantly from the low, weather-damaged levels of 1981, and receipts from sales increased by 11.3 per cent. The output of fruit, berries in particular, increased in 1982 resulting in a .6 per cent increase in cash receipts, while sales of floriculture and nursery crops increased slightly.

In contrast to the situation in the crop sector, sales of livestock and livestock products improved in 1982. Cash receipts from the marketing of cattle, calves, hogs and sheep rose appreciably, aided by significant increases in the prices of feeder cattle and calves, and in particular of hogs, in the summer and early fall.

Poultry meat and egg production decreased because of imports from the United States and Alberta as well as lower consumer demand due to the economic recession. Cash receipts for poultry and eggs declined by 4.5 per cent and 6.3 per cent, respectively.

Farm Operating Expenses (Table III)

Compared with previous years, farm operating costs and depreciation charges rose only slightly in 1982, to an estimated $790.5 million. There were significant increases in items such as wages—up by 10.8 per cent, and machinery expenses—up by 15.2 per cent which reflected the effect, respectively, of higher wage payments in most sectors, and of increased repairs to equipment by farmers in lieu of purchases of new machinery. Helping to offset such increases were reductions in interest charges down 8.0 per cent and feed costs down 13.5 per cent. These reductions resulted, respectively, from a steady decline in interest rates since July 1982, and lower grain prices.

Farmland and Number of Farms

The 1981 Agriculture Census indicated an area of 946,700 hectares of cultivated farmland in British Columbia. An estimated 8,100 hectares were added to this area in 1982. The census also recorded the total number of agricultural holdings in the province at 20,012 in 1981, increasing slightly to 20,020 in 1982.

Food Processing (Table IV)

As of December 1982, there were 593 firms processing food and beverages in British Columbia. The estimated value of agricultural commodities marketed by such food and beverage manufacturing firms in the period January to December 1982 amounted to $2.46 billion—up by 2.4 per cent over the (revised) estimate for the same period a year earlier.

Retail Food Prices

British Columbia's retail food prices rose moderately by 8.2 per cent in 1982. Significant increases were noted in the prices of dairy products—up by 12 per cent, poultry—up by 5 per cent, and fruit and vegetable prices up by 7.5 per cent while egg prices rose a modest 1.1 per cent and beef prices very slightly by 0.2 per cent. In real terms, British Columbia's retail food prices declined by 2.5 per cent, with a slightly larger decline of 3.1 per cent in the real price of food consumed at home.

Table II British Columbia Farm Cash Receipts, 1981–1982

	(Thousands of Dollars)		Per Cent Change
	1981	Preliminary 1982	
Wheat	25,095	12,117	− 51.7
Oats	3,419	2,938	− 14.0
Barley	14,104	10,040	− 28.8
Other field crop payments (1)	7,072	5,680	− 20.0
Canola (rapeseed)	6,063	2,058	− 66.1
Potatoes	17,715	18,352	+ 3.6
Fruits	91,542	92,120	+ 0.6
Vegetables	52,232	58,146	+ 11.3
Floriculture and nursery	46,548	51,200	+ 10.0
Other crops	40,984	33,171	− 19.0
TOTAL CROPS	304,774	285,822	− 6.2
Cattle and calves	119,530	122,751	+ 2.7
Hogs	44,327	51,934	+ 17.2
Sheep and lambs	1,960	2,637	+ 34.5
Dairy products	195,681	217,077	+ 10.9
Poultry	81,793	78,150	− 4.5
Eggs	60,467	56,677	− 6.3
Honey	5,034	5,100	+ 1.3
Other livestock and products	14,784	20,469	+ 38.4
TOTAL LIVESTOCK AND PRODUCTS	523,576	554,795	+ 6.0
Other cash receipts (2)	35,114	59,798	+ 70.3
Total cash receipts from farming operations	863,464	900,415	+ 4.3
Grain embargo payments	476	—	—
TOTAL FARM CASH RECEIPTS	863,940	900,415	+ 4.2

Source: Statistics Canada, December 1982.
Note: Totals may not add due to rounding.
[1] Includes crop insurance, cash advances, deferred grain receipts and Western Grain Stabilization Act Payments.
[2] Includes forest products, dairy supplementary payments and British Columbia Farm Income Insurance payments.

Table III British Columbia Farm Operating Expenses and Depreciation Charges, 1981–1982

	(Thousands of Dollars)		Per Cent Change
	1981	Preliminary 1982	
Taxes	12,389	13,502	+ 9.0
Rent	14,699	16,223	+ 10.4
Wages to farm labour	112,758	124,946	+ 10.8
Interest on indebtedness[1]	183,792	173,513	- 5.6
Total machinery expenses	84,266	97,034	+ 15.2
Fertilizer and lime	24,067	25,997	+ 8.0
Other crop expenses[2]	29,161	31,035	+ 6.4
Feed[3]	125,797	110,738	- 12.0
Other livestock expenses[4]	18,418	19,044	+ 3.4
Repairs to buildings	13,691	14,611	+ 6.7
Electricity and telephone	15,473	16,424	+ 6.1
Miscellaneous	47,536	51,691	+ 8.7
TOTAL OPERATING EXPENSES	682,047	694,758	+ 1.9
Depreciation on buildings	29,344	29,020	- 1.0
Depreciation on machinery	61,998	66,705	+ 7.6
TOTAL OPERATING EXPENSES AND DEPRECIATION CHARGES	773,389	790,483	+ 2.2

Source: Statistics Canada, December 1982.
[1] Net of an adjustment of $8.1 million for provincial interest reimbursement.
[2] Includes pesticides, seed, irrigation, twine and containers.
[3] Purchased through commercial channels only.
[4] Livestock purchases, A.I. charges and veterinary expenses.

Table IV Number of Food and Beverage Industries—British Columbia, 1982

Slaughtering and meat processors	98	Biscuit and confectionary manufacturers	20
Poultry processors	15	Nuts	9
Egg processors	20	Bakeries	37
Fish products industry	92	Sugar and honey processors	18
Fruit and vegetable canners, preservers and frozen fruit and vegetable processors	70	Miscellaneous food processors	57
		Soft drink manufacturers	23
Dairy products industry	37	Distilleries	7
Flour and breakfast cereal industry	15	Breweries	8
Feed industry	56	Wineries	11
		TOTAL	593

Source: Marketing Branch, Ministry of Agriculture and Food, January 1983.

Executive Officer

The Executive Officer is responsible for the coordination of legislative matters within the ministry. In 1982, 34 Orders-in-Council were processed relating to 13 Acts.

The Executive Officer serves as secretary to the British Columbia Agricultural Aid to Developing Countries Advisory Committee which, during 1982, recommended support for 40 projects and eight disaster operations sponsored by 18 charitable organizations.

The Executive Officer is responsible for the administration of the ministry's policy of financial assistance to many agricultural associations. Under this policy, operating grants were made to fair and exhibition associations, to the Provincial Women's Institute, district Farmers' Institutes and others. As superintendent of Farmers' Institutes, he provided liaison services for their members with the ministry, and organized the annual meeting of the Farmers' Institutes Advisory Board.

Additional duties of the Executive Officer included those of secretary at senior management meetings and secretary to the B.C. Agricultural Services Coordinating Committee which, with assistance from its six lead committees, monitored agricultural developments in the province and encouraged the organization of seminars, workshops and research to identify and overcome problems of importance to the agricultural industry.

Management Services

Management Services (formerly Finance and Administration) is comprised of five major sections, each responsible for an area in the administration of the Ministry of Agriculture and Food.

Facilities and Services

The function of the facilities and services division is to provide the necessary support services to the ministry including: adequate office space (in co-operation with the British Columbia Buildings Corporation), purchase of office furniture and equipment, photocopiers, government vehicles, supplying telecommunications services and the administration of Treasury Board submissions.

In accordance with new Treasury Board Financial Administration Policy, a furniture and equipment inventory was completed during the summer of 1982 as well as a complete review of the photocopying equipment and requirements of the ministry. The photocopier review lead to many changes throughout the ministry, resulting in cost savings and in many instances improved office efficiency.

Financial Services

The financial services division (formerly Accounts) provides for the administration of all financial and accounting systems and programs within the ministry, including: revenue billing and collection, payroll, accounts payable, accounting records and procedures and the preparation of timely financial management reports. Financial services holds responsibility for a complete audit function of all programs as well as external audit of those private sector institutions receiving financial assistance through ministry programs.

Computer Services

The computer services division (formerly Data Processing) provides leadership in the development of computer programs for the ministry and is responsible for organization, development and management of the data and word-processing budget and activities.

While all routine jobs continued throughout the year, several new projects were implemented or initiated and carried

through the project development cycles, i.e. feasibility, cost benefit scrutiny and system design phases. The total number of projects increased from 35 to 49 in 1982.

Activities were highlighted by further expansion of terminal equipment acquisition for district headquarters, introduction of Envoy 100 electronic mailbox system, expansion of word processing capabilities, completion of design phases for automating the data capture at the Soils Laboratory at Kelowna and Dairy Laboratory in Burnaby, and completion of the Canada Coin File programmes.

Print Shop and Office Services

During 1982 approximately 200,000 publications were distributed in answer to 22,224 requests from regional and district offices, other government agencies and the general public. Over 2.5 tons of 4-H material was supplied to 4-H clubs in a total of 549 orders.

Internal Print Shop production again increased from the previous year with 1,100 printed projects completed on the offset press and binding equipment. The number of printing impressions totalled almost five million.

This office also handles most mailing lists for the distribution of publications, forms, factsheets and press releases; it processes all stationery requisitions for the ministry, acts as a stationery-shipping and supply depot, processes all incoming and outgoing mail, and acts as a forms design and control center.

Personnel Division

With the imposition of hiring restraints 1982 was a challenging year for the Personnel Division. This led to careful analysis of staffing to ensure effective utilization of the human resources of the ministry. Full delegation of recruitment and staffing authority was achieved in July and 58 competitions were held and 59 appointments were made including Order in Council appointments. A total of 300 auxiliary employees was hired, 100 of whom were summer students.

The division was responsible for contract administration and the processing of all grievances and arbitration proceedings and represented the ministry on bargaining for Master and Component Agreements, both for the B.C. Government Employees' Union and Professional Employees' Association.

Training and Orientation

There were significant increases in both the types of developmental and training courses offered and in the numbers of employees attending these courses. Approximately 200 man days were scheduled which included management, professional, clerical and secretarial development.

The division organized and conducted the ministry's second group orientation session from April 19 to 23 and 17 professional employees participated in the program which began in Victoria, moved to the Lower Mainland and concluded in Kelowna. The division also organized and conducted three separate programs for administrative support staff in Prince George, Kelowna and Abbotsford. The three programs were designed to acquaint clercial staff with the changes in accounting, administration, facilities and personnel.

An in-house course, Management in the Public Service Environment, was presented to 13 branch directors.

Deltak Inc. was contracted to provide the ministry with inexpensive video-taped training in the areas of new office technology and computer systems.

The division purchased a video unit to be used for training purposes, and in December began working with the Information Branch to develop tapes to ensure that the orientation program would reach a maximum of ministry staff.

During 1982, there was a rationalization of occupational health and safety committees and all offices and work sites of the ministry now have committees in place. At the same time, the ministry's safety record improved substantially and the ministry was awarded the On Target Safety Award for reducing the total number of days lost due to work-related injury. Planning proceeded for further training in occupational health and safety for all members of the committees.

Policy Development and Economics Division

With the reorganization of the Ministry of Agriculture and Food in mid-summer of 1982, the Economics Branch was transferred to the Policy Development Division. This change integrated the economics capability within the ministry into one unit.

Policy Development and Planning

The Policy Development and Planning Division is responsible within the ministry for the development, analysis and evaluation of government policies and programs, and development strategies for the agriculture and food industry in the province. The division is also the primary source of economic input to senior management on significant issues.

During the year, Policy Development and Planning was occupied with analysis, development and evaluation in several major areas, including: the impact to B.C. of proposed changes to the Crows Nest Pass freight rates on export grain, domestic feed grain policy, resource use and allocation criteria, and strategic planning.

Policy Development and Evaluation

Various developments related to the resolution of the Crow rate on export grain were monitored, their impacts on British Columbia agriculture were analyzed. Specific concerns were relayed to ministries responsible for fashioning the provincial position, as well as to federal officials.

While Agriculture Canada held hearings across Canada to hear regional concerns, Policy Development Branch staff reviewed domestic feed grain policy and participated with industry groups in preparing submissions on feed freight assistance and emergency feed supplies. Major inputs outlining the status of the agriculture and food sector, and programs for accelerated development were provided to the Cabinet Committee on Economic Development's review of the economy.

Economic Analysis

Until mid-year, staff continued to be involved in preparations for hearings on B.C. Hydro's Peace River Site "C" Project. A supplement to the Provincial Government's Blue Paper on the project was prepared and included refinements to earlier estimations of resource impacts as well as detailed compensation options to assist the British Columbia Utilities Commission in its recommendations should the project be approved. Staff chaired the ministry's panel at the hearings and prepared detailed responses to questions raised by non-government participants at these public meetings.

Additional economic analysis was directed at methodological questions in the review of land use allocation criteria to be used in the conversion of lands from forestry to agriculture. Staff also continued to support the Provincial Government's Central Statistics Bureau's work on the Input-Output Model, which includes a detailed agricultural component.

Strategic Planning

Preliminary work was begun on the development of regional, commodity sector and special purpose (land use) plans, and a more detailed provincial agriculture and food sector development strategy.

Economics Branch

The Economics Branch provides leadership, educational and other support services to farmers, agri-business, producer organizations and guidance to ministry and other government agencies in the following areas:

- farm business management
- production economics
- resource economics
- agricultural statistics

These services are provided through client counselling, courses and workshops; preparation of bulletins and factsheets; conducting studies and surveys and participation in joint programs and investigations with other groups and agencies.

In addition to supervisors for each of these four areas, the branch retains a regional farm economist and farm business management technician in four of the five administrative regions of the province. The major role of this field group is to adapt and implement branch provincial programs to local conditions while ensuring local needs are addressed in branch program development.

Farm Business Management

The primary purpose of this program is to improve the business management skills and practices of farm managers. During 1982, this was accomplished through a full range of activities including:

Publications

Uncertainties created by various Federal budget initiatives prevented updating of tax related bulletins. It is planned, however, to update *Taxation and the B.C. Farmer, Farm Business Partnerships* and *Farm Business Corporations* prior to mid-1983.

Legal Aspects of Private Farm Leases and *Sample Lease Agreements* for six enterprises were published. *Sources of Farm Credit* was updated for release in 1983.

A new farm account book resulting from a joint Federal-Provincial initiative was released late in the year and branch staff are currently reviewing the financial management worksheet package to make it fully compatible with this new record book.

Factsheets

Publication of factsheets on farm business management topics continued to receive priority. With a circulation of 3,000, these factsheets are designed to assist farmers and those who work with farmers in solving their management problems. Timely topics are selected and during 1982, half were income tax related.

Enterprise Case Studies

Enterprise case studies outline the financial structure, profitability and solvency of typical production units on a commodity basis. Their primary purpose is to supplement other available cost and return information for use in advisory and workshop situations. These information packages are not published but are available upon request through branch staff. Six studies, including cow-calf, dairy, hogs, broilers, grapes and apples were updated during the year. Others will be upgraded or developed during 1983.

Farm Financial Management Training Project

The third year of this ARDSA-funded Farm Financial Management Training project continued to provide a training program to improve the financial management skills of farmers. An important feature of the project is the scheduling of courses, often at remote locations, throughout the province. Effective cost control measures will enable this project to be extended until at least December 1983.

Administration for this project is the responsibility of a management committee representing the University of British Columbia, the B.C. Federation of Agriculture and the Ministry of Agriculture and Food. Courses of two to four days in duration are offered on a commodity basis at each of three levels. These enable a farm manager to progress from an introductory level, dealing with the basics of financial management to an intermediate level concerned with the application of financial management tools. An advanced level covers more

specific topics in detail such as investment analysis, farm business analysis, business organization alternatives and marketing. This level uses as far as possible a practical case study approach.

Two new courses , "Paper Handling and Record Keeping" and "Cattle Marketing", were introduced in 1982. Table I illustrates the range of topics, commodities and course levels offered to 600 managers in 1982.

In response to evaluation questionnaires, 95 per cent of the students indicated they expected increased farm profits to result from their participation in the project. Farm managers especially appreciated the integration of production topics with economics.

Branch staff . . . presented a . . . Computer Fair . . . Feedback from 500 participants indicated B.C. farmers are eager to use computer technology to integrate production, economic and marketing opportunities.

Table I Workshop and Student Numbers, Jan.–Dec. 1982, by Commodity and Course Level

Commodity and Type	Number of Workshops	Number of Students
Cattle—		
I	4	52
II	1	15
III—business analysis	6	79
—feeding	1	9
—record keeping	4	64
—marketing	1	14
Orchard—		
I	1	17
II	2	21
III—record keeping	5	91
Dairy—		
I	2	27
II	2	30
III—business analysis	1	22
Swine—		
III—business analysis	2	23
Grain—I	3	44
Beekeeping—I	2	38
Vegetable—I	2	21
Nursery—I	2	17
Mixed Farm—I	1	16
TOTAL	42	600

Workshop and Short Courses

Regional farm economists and technicians offered short courses on a variety of topics such as tax and estate planning, business organization, leasing, investment and risk, marketing, farm credit and microcomputers.

Branch staff, in co-operation with others, presented a major two-day Computer Fair at Chilliwack during November. Feedback from an estimated 500 participants indicated B.C. farmers are eager to use computer technology to integrate production, economic and marketing opportunities.

Production Economics

The production economics program carries out costs and returns studies for specific commodities and agricultural processes, develops and maintains a data bank of economic coefficients and factor costs and assists other branches within the ministry in carrying out production economic analysis on selected demonstrations or research.

Programs in 1982 included:

Consensus Data Studies—This inexpensive method of researching production costs was utilized to obtain and publish 17 reports covering 16 commodities. The consensus approach involves the gathering of information from approximately six producers of a selected commodity. Plans are underway to develop livestock cost studies in 1983.

Agriculture Input Cost Survey—Monthly surveys of input costs and availability of certain commodity items continued for three reporting regions: Okanagan, South Coastal and the Peace River Region. At year-end this project was evaluated. Expansion into new areas is not being planned at this time.

In conjunction with the Marketing Branch a bi-weekly information sheet was initiated in July with "Agri-Commodity Prices" on one side and Agri-Input Costs" on the other.

Resource Economics

The resource economics program is designed to provide leadership and support to ministry staff involved in questions relating to resource allocation and use, to provide a methodological back-up to assist those carrying out benefit cost analysis and to serve on various related task forces.

Branch and divisional staff accomplishments during 1982 included:

- Participation in inter-ministry discussions to identify a mutually acceptable methodological approach in assessing the economic impact of alternative land uses, e.g., agriculture, forestry, recreation and wildlife.
- Participation in inter-agency discussions relating to specific sites within the Provincial Forest and Deferred Planning Area (DPA's), e.g., McMurdo Benches and Horsefly. Review and analysis of consultant reports tabled by other agencies and interest groups.
- Provision of information on resource use issues and assistance to other ministry staff on projects such as B.C. Hydro's Site "C" proposal.

Agricultural Statistics

The statistics unit of the Economics Branch provides the B.C. agriculture and food industry with relevant, timely and accurate data on the size and nature of the industry. This information is essential for decision making and policy formulation (*see* Table II).

In response to the "1981 Census of Agriculture" results released by Statistics Canada, the branch produced a report entitled "Census of Agricultural Statistics, B.C. 1971 and 1981". A 1981 "Agricultural Statistics Yearbook" was also released as an update to the 1978 yearbook.

The responsibility for assembling regional horticulture statistics was transferred to the unit during 1982. A horticulture data bank has been established to facilitate the preparation and updating of reports. The statistics for the 1981 crop year were published at year end.

The report "Supply and Demand Balance in the B.C. Food Sector", funded under ARDSA, was completed describing import/export production and consumption trends in the province for the period 1961–1980.

Other reports and factsheets issued by the branch in 1982 included:

- 1981 Red Meat Production and Consumption
- 1981 Farm and Food Statistics
- 1981 Farmland Values
- 1982 B.C. Agri-Stats Factsheets
- Hay and Field Crops Surveys in association with Statistics Canada

Special Projects

Branch staff provided input into many inter-agency committees and project groups including: 1982 Agricultural Institute of Canada Convention at U.B.C., Expert Commitee on Farm Management Services, Western Farm Management Extension Committee, Beef Industry Technical Committee, ARDSA Sheep Production Technology Transfer Project, Computer Fair at Chilliwack, Farm Management Staff Training Seminar at Richmond and Regional Commodity Co-ordinating Committees.

Other branch activities involved microcomputer applications, a labor management survey and a D.A.T.E. project on electrified deer fencing.

Table II Key B.C. Economic Indicators—Agriculture and Food

	1971	1981	Percentage of Change 1971–1981
Number of Farms	18,400	20,012	+ 8.8
Cultivated Land Area	708,225 ha	946,998 ha	+ 33.7
Tame Hay	207,574 ha	290,238 ha	+ 39.8
Silage Corn	5,242 ha	11,729 ha	+ 123.7
Canola (Rapeseed)	7,928 ha	25,379 ha	+ 220.1
Vegetables	7,250 ha	7,867 ha	+ 8.5
Tree Fruits	13,299 ha	11,729 ha	− 13.4
Small Fruits	3,991 ha	5,580 ha	+ 39.8
Nursery and Cut Flowers	817 ha	1,244 ha	+ 52.3
Mushroom and Greenhouses	538,820 m^2	1,003,320 m^2	+ 86.2
Area Fertilized	129,603 ha	362,118 ha	+ 179.4
Irrigated Area	89,427 ha	100,479 ha	+ 12.4
Cattle	573,171 head	789,841 head	+ 37.8
Pigs	78,621 head	254,895 head	+ 224.2
Sheep	53,112 head	66,988 head	+ 26.1
Hens and Chickens	7.9 mil. head	10.0 mil. head	+ 26.6
Hired Labour			
—year-round	3,210 workers	4,876 workers	+ 51.9
—seasonal	310,666 weeks	484,165 weeks	+ 55.8
Total Value of Farm Capital	$1.6 billion	$8.5 billion	+ 431.2
Capital Investment	$87,000/farm	$426,000/farm	+ 389.6
Number of Tractors	21,953	28,761	+ 31.0
Number of Balers	4,527	7,186	+ 58.7
Farms by Type (sales + $2,500)			
Dairy	1,633 farms	1,345 farms	− 17.6
Cattle	2,235	4,558	+ 103.9
Hogs	159	347	+ 118.2
Sheep	48	398	+ 729.2
Poultry	644	850	+ 32.0
Fruit and Vegetables	1,948	2,815	+ 44.5
Field Crops	943	1,492	+ 58.2

Source: Statistics Canada, 1981 Census of Agriculture

Information Services Branch

Effective communication practices are important to all ministry staff, particularly field staff, in their extension efforts. The Information Services Branch provides communications expertise to help field and commodity specialist staff members extend their knowledge and experience more effectively to farmers. Although the branch targets its information dissemination efforts mainly towards farmers, it also initiates projects to increase public awareness of B.C. agriculture.

Branch activities are carried out in two general areas:

- technical agricultural information for farmers
- public relations programs explaining government services to both the urban and rural audiences.

Technical Information

Publications, factsheets, and audio-visual programs are the prime tools providing technical information to farmers. These are used by field extension staff in seminars, workshops, and in personal consultations with farmers.

Printed Material—A total of 45 ministry publications were printed or revised during 1982. In the face of increasing costs, efforts to practice economies were made by reducing paper quality, quantities printed, etc. and restricting distribution to a certain client group.

On the basis that the transfer of technical information to producers is essential, and upon the recommendation of the Deputy Minister, Government Information Programs, Treasury Board granted an exemption to the ministry from a government-wide fiscal restraint directive postponing the printing or reprinting of all technical publications. The exemption was granted on the premise that ministry publications are necessary, not only to the agriculture and food industry in the province, but for the safety of producers, farm workers and consumers.

Ministry publications are necessary, not only to the agriculture and food industry in the province, but for the safety of producers, farm workers and consumers.

The annual crop production guides continued to play an important role in the transfer of technical information to producers. However, due to extensive text changes that would have delayed printing to late spring, the 1982 field crops guide was the only one not printed; instead, a supplement to the 1981 guide was issued and provided adequate information to growers.

Among the many publications issued, key ones included: "Seeding Grassland Ranges" for cattlemen and range specialists, "Stone Fruit Virus Diseases" and "Insects and Mites of Tree Fruits in British Columbia" for tree fruit growers, "Pest Problems in Small Greenhouses and Indoor Plantings" for persons with small greenhouses or commercial indoor plantings. "The B.C. Cattle Marketing Guide", a directory of meat purveyors and slaughterhouses, contains information of special interest to cattlemen and the agri-business sector of financial institutions. "The Urban Gardener", a bi-monthly newsletter for gardeners, economically produced in-house, was coordinated by the branch and answered many of the questions commonly posed by an increasing number of home gardeners growing their own food.

Audio-visual—The trend towards increased use of audio-visual aids in extension work was particularly evident in 1982. Higher travel costs and increasing responsibilities to a wider audience has forced extension staff to spread their expertise using video-tape programs, slide-tapes and film. As a result, the branch placed emphasis on education and extension oriented audio-visual programs. A ½" video-tape recorder and camera was purchased marking the beginning of a planned significant expansion of the Kelowna-based media production centre's video-tape production capability

over the next two to three years. The videotape capability will supplement the existing 16 mm and slide-tape programming.

On March 27, 1982, a one hour branch-produced program on beef herd management was televised on the Knowledge Network and beamed via satellite to eight community colleges around the province where ranchers and ministry staff viewed the show and asked questions on air. A follow-up survey indicated that while reaction was positive to content, the broadcast signal to rural communities was extremely limited.

As part of the D.A.T.E. program, the branch installed two self-serve audio-visual play-back units (½" video recorder and monitor) as a pilot project in the Prince George and Kamloops regional offices. Response was light during the summer months although it increased during the fall and winter extension period.

Several film, slide-tape and video programs were completed or initiated during the year on topics including pesticide safety, farm record keeping, crop insurance, and livestock management. The majority of audio-visual programs worked on were aimed at the British Columbia livestock industry.

Public Relations

Thirty-nine news releases were issued during the year to announce government policy on agricultural issues, industry events, and staff appointments. Releases were sent to the media in the province and to key media representatives across Canada.

In addition to the normal public information material such as information kits and factsheets, advertisements were placed to create an awareness of B.C. agriculture during Agriculture Week (first week in October) primarily sponsored by the B.C. Federation of Agriculture. Other advertisements promoting ministry services and announcing ministry seminars and workshops were placed in weekly and daily papers.

Feature articles were prepared for use by the B.C. Federation of Agriculture during their Agriculture Week campaign. Other articles prepared during the year focused on the impact of B.C. agriculture on the provincial economy, the government's knapweed control efforts, and others. Efforts were made to encourage national magazines to use provincial articles describing a unique and interesting development that would have benefit or be of interest across Canada.

A retired radio broadcaster was commissioned to prepare 30 one-minute radio public service announcements each featuring one aspect of agriculture in the province. The messages, which emphasized human interest aspects of B.C. agriculture, were distributed to 34 radio stations across the province for their use at no cost, adjacent to their regular farm broadcast.

Audio-visual projects continued in 1982 included production on a film to promote the B.C. tree fruit industry, a revision to a short film describing B.C.'s unique range seeder, a slide-tape outlining the B.C. crop insurance program, and a slide-tape depicting innovations in orchard management among others.

A display, to promote ministry programs, was used at the B.C. Fruit Growers' Convention in Kelowna, the Horticulture Trade Show in Vancouver, the Agricultural Computer Fair in Chilliwack, and local agriculture events in the Peace River region.

General

The branch director was involved in a joint effort by the province's post-secondary educational institutions to publicize available agriculture course options leading to a career in agriculture. At year end, educational institutions were submitting summaries of their agricultural programs to the branch for eventual compilation into a brochure. It will outline agricultural education programs for high school students and the public who may be considering further education and a career in agriculture.

During the year, the branch participated in seminars to upgrade staff in personal communication skills such as the use of audio-visual aids in extension work.

Assistant Deputy Minister Field Operations

Regional Extension Services

Peace River Region

Agriculture in the Peace River region is comprised mainly of cereal and livestock production similar to much of Canada's dryland prairie agriculture. Along with cereal production, the area produces most of the province's forage seed and oilseed.

The region is served from two district offices located in Fort St. John and Dawson Creek. Extension activities are coordinated regionally by two extension committees, Field Crops and Livestock. These are ministry committees with producer advisors.

A special extension advisory committee involving both the Ministries of Agriculture and Food, and Lands, Parks and Housing as well as Agriculture Canada and Fort Nelson Farmers' Institute representatives, is responsible for planning and implementation of all extension activities in the Fort Nelson area.

Special Extension Activities

Extension programs for all producers were focused on soil erosion and soil fertility. A land clearing seminar was also held in Fort Nelson.

Radio tapes on a variety of topics were prepared for airing three times each week on radio stations in Fort St. John, Fort Nelson, Dawson Creek and Chetwynd. The *Peace River Farm News*, with articles of current interest prepared by ministry staff, was mailed to producers four times during the year.

Approximately 1,200 office consultations took place between producers and extension staff on such topics as farm economics and management, chemicals, land development, farm machinery, 4-H clubs and community pasture management.

Land-use Planning

Regional Extension Services staff interacted with other ministries and agencies on such matters as land-use planning and resource development impact. In 1982, staff participated in the development of Official Settlement Plans for both the North and South Peace, the Public Utilities Commission's hearing regarding the proposed Site C hydroelectric development, the preparation of a publication on farmers surface rights, the review of applications by cattlemen for acquisition of core lands from their grazing leases, a task group responsible for resolving boundaries of proposed forest reserves, community pastures administration and development, an interagency problem wildlife management committee, and a regional weed control program.

Field Crops

Dry conditions of 1981 resulted in poor germination of crops in 1982, and late rains from July to September in 1982 caused problems in harvesting. Nearly 25 per cent of the crop was left in the fields, and much of the harvested cereals were in tough or damp condition.

Extension staff made over 1,000 field and office consultations related to field crops in 1982.

Wheat plantings continued to expand reaching 65,000 hectares while canola plantings increased by 70 per cent since 1981 to 61,000 hectares. Barley plantings dropped slightly to 89,000 hectares.

The extension program offered to grain producers covered a broad range of activities including the Provincial Seed Fair Seminar, a Grain Marketing Strategies '82 symposium, Financial Management Short Courses, field days on tillage and seed production, and a producer meeting on pesticide safety. Extension staff made over 1,000 field and office consultations related to field crops in 1982.

Horticulture

Horticulture crops suffered with other field crops throughout the 1982 growing season with the exception of irrigated sweet corn in the Peace River Valley. The decline in horticultural crops over the past few years has now reached its bottom level as some increases in production are expected in 1983.

Honey

Honey production in 1982 improved slightly from 1981 to 51 kg per colony despite the poor weather. This is still considerably below the long term average of 68 kg. Apiculture branch staff provided a general extension service as well as offering regulatory functions such as inspections for disease and related control measures.

Livestock

Extension services offered to livestock producers included seminars on nutrition and surface rights for beef producers, financial management workshops for swine and beef producers, a dairy structures workshop, a fencing and pasture management field day and short courses on production for sheep producers, and two horse health and management seminars.

These activities were carried out with the co-operation of the Livestock, Economics and Engineering Branches of the ministry and in some instances, Northern Lights College or the University of British Columbia. Extension staff made 300 livestock production field visits or office consultations.

The beef cow herd in the Peace River region, numbering around 31,000 head, continued to decline in 1982 to less than half of its previous high. The continuing decline was attributed to an extremely cold winter that resulted in critical hay shortages, a late spring, early summer drought, and generally low returns at the marketplace.

Utilization of the eight Peace River community pastures declined by 1,000 head to 9,300. ARDSA expenditures for development and improvement of these pastures totalled $77,000 compared to $220,000 in 1981, while pasture associations spent $107,000. One new pasture was established at Wartenbe, located near Chetwynd. The $1.75 million Upper Cache Range Development Co-ordinated Plan funded by ARDSA was essentially completed in 1982.

Dairymen in the region had a further reduction in quota as they grappled with the area's declining population. Fluid milk sales dropped to 5.5 million litres, or 85 per cent of the total production.

Sheep numbers declined in 1982 largely due to depressed prices. The decline will further hamper efforts at collectively marketing liner loads of uniform quality lambs from the region.

The swine industry provided a bright spot among agricultural activities with 20,000 hogs marketed at improved prices. Most of the industry's expansion took place within existing facilities but falling interest rates at year-end sparked some inquiries into major expansion in 1983.

Central Region

The rugged, central agricultural region is geographically the largest in British Columbia and stretches from Quesnel in the south to the northwest corner of the province. The region includes the Queen Charlotte Islands.

Improved farmland in the Central region has increased by 32 per cent since 1976. The value of farm production has risen to over $30 million as new techniques and crop varieties are being adopted, often with dramatic results. The region, because of its size and increasing complexity, presents a notable challenge to the ministry's extension services.

Land-Use Planning

Multiple resource demands on a finite land base require ministry personnel to concern themselves with land planning for the long term growth of the industry. Resource planning attempts to maximize the returns from the land base of the province and to ensure that user resource conflict is minimized. 1982 saw the majority of land planning for all districts in the region completed. Future emphasis will be on full utilization of those lands designated for agricultural use.

General Extension

Staff members were actively involved in organizing fairs in co-operation with local fair boards. Displays were prepared for exhibitions at Prince George, Vanderhoof and Smithers. Response to these displays was exceptional as staff answered over 800 requests for literature and consultations. Regional personnel worked closely with the 4-H program and its more than 50 clubs throughout the area.

Field Crops

Staff worked with farmers in Vanderhoof and Smithers districts to determine and demonstrate management practices and crop varieties suitable for the area.

Work continued at locations from Quesnel to Atlin, and on the Queen Charlotte Islands with seed suppliers advising that for the first time variety seed was outselling regular commercial grades. Increased yields, winter hardiness and disease resistance are all being realized because of the improved varieties of cereals and forage crops. Trials on the need for lime are being conducted throughout the region.

Farmers have responded in record numbers to livestock extension events.

Livestock

Farmers responded in record numbers to livestock extension events. During the winter, calving seminars, with more than 400 livestock operators participating, were organized using the ministry livestock nutritionist and veterinarian. Currently, over 36 per cent of all the cattle on Record of Performance testing come from this region indicating a high degree of interest in herd improvement.

District agriculturists and a dairy specialist continued a program with dairy producers to control bovine mastitis in their herds. Interest in the sheep industry increased as extension staff held informational meetings, seminars and a judging field day.

Horticulture

Horticulture crop hectarage increased 16.5 per cent providing the region with local broccoli, cabbage, cauliflower and carrots. Some vegetables were sold in Alberta, a market expected to expand in the future.

Some Prince George area growers made considerable investments in greenhouse operations producing tomatoes and cucumbers. An additional crop for greenhouse operators has been the propagation of tree seedlings for the forest industry.

Thompson-Cariboo Region

The Thompson-Cariboo region, with offices at Kamloops and Williams Lake, covers approximately 15 per cent of the total provincial land area. Climate and topography favour cattle ranching and the region has 45 per cent of the province's beef cows (1981 census). Alfalfa hay farming, corn production and fruit and vegetable enterprises, with the benefit of irrigation, contribute to the area's agriculture industry.

Extension Activities

Providing useful information to an increasingly sophisticated livestock industry is a great challenge to extension staff. Over 25 field days, workshops, seminars and short courses were organized by regional staff including the following examples:

- fence field day in Nicola Valley
- Northern Lights College spring tour at the Onward Mission Ranch
- branding, veterinary and mineral feeding workshop at Birch Island
- round bale silage workshop in Kamloops
- wetland field days at Anahim Lake and Watch Lake
- winter management of the beef herd in Kamloops and 100 Mile House

Regional Extension Services staff conducted 14 trial and demonstration plots and projects. Many of these were duplicated at several locations.

Trials were designed to find verticilium wilt-resistant alfalfa varieties and to help producers select forage, cereal and silage corn varieties suited to the region. The tests also provided data to determine fertilizer application rates.

Wetland Meadow Water Control—Hay production on wetland meadows is important in the region. These meadows are flooded for most of the year. Trials have been designed to determine proper water levels, the best time to drain, the necessary cultural practices, fertilizer needs and the kind and variety of forage to grow. This project has been funded under the Demonstration of Agricultural Technology and Economics (D.A.T.E.) program of the ministry, with the co-operation of the Engineering Branch.

Irrigated Pasture for Yearling Steers—Three groups of steers were used to compare production from three different grazing regimes including: irrigated pasture all season, irrigated pasture half season—range half season, and range all season. The group on irrigated pasture gained substantially more than the other two groups.

. . . staff worked to protect and enhance agricultural options for food production in the region.

In addition to these projects, staff members monitored and maintained 25 weather stations in co-operation with Agriculture Canada climatologists and the B.C. Federation of Agriculture.

Staff continued to support the 4-H program which showed an increased membership to 572 in 38 clubs.

Field Crops

Cool, dry weather in the spring and wet weather in the summer combined to make forage production difficult. While the slow snow melt prevented serious flooding, it extended the normal flood period hampering hay harvest. Due to heavy summer rains, 75 per cent of the wet meadows in the Cariboo-Chilcotin did not dry enough to harvest.

Cereal crops are harvested mainly as forage but more interest is being shown in grain production. A number of producers are double-cropping barley for silage.

Livestock

Beef cattle numbers have remained stable over the past 10 years. Cattle marketed through the B.C. Livestock Producer Co-op Association increased 16 per cent over 1981. Field sales accounted for 22 per cent of the Co-op sales.

A possible trend to a reduced breeding herd was noted in the increase in heifers and cows offered on the fall market. These sales were up 16 per cent and 39.5 per cent respectively over 1981. The number of cattle feeders who feed over 200 head dropped slightly.

There were three fluid milk shippers and one cream shipper at the end of 1982.

Sheep numbers have declined 11 per cent in the last 10 years. Other livestock production continues in relatively small numbers.

Horticulture

While the wet weather proved detrimental to strawberry and raspberry production, potato and onion crops were generally good. Vegetable production in the region continues to grow and interested groups are

looking into the development of processing and storage facilities.

Land-use Planning

Land-use planning continued to occupy much staff time. Regional personnel have been active on several committees involving deferred planning areas, forest reserves, coreland purchase applications and resource management. On these committees and in other planning areas, staff worked to protect and enhance agricultural options for food production in the region.

Okanagan-Kootenay Region

The Okanagan-Kootenay Region in southeastern British Columbia occupies over 11 million hectares of land, 700 thousand hectares of which are in the Agricultural Land Reserve and 336 thousand hectares privately-owned farmland. This is the most important fruit-producing region in the province. In addition to an increasingly significant livestock base, the region also has an extensive field crop industry located primarily in the North Okanagan Valley and Creston Valley.

Extension Activities

The ministry's co-ordinated approach to extension planning and delivery of producer advisory programs took hold during the past year with several planning committees being struck at the district and regional level to solicit input from producers, industry fieldmen, academic and research agencies and other government agencies. Mechanisms are firmly in place to work closely with agricultural researchers and industry officials.

The result has been a dramatic reduction in the number of committees needed to serve industry and the development of a complete awareness of where the industry is going. Co-operation from all sectors involved in this process has been excellent.

Virtually all of the region's staff participated in the delivery of the financial management programs.

Livestock

A specific extension focus was developed for each commodity in the region. In the dairy sector the emphasis was on herd management and feed quality. A comprehensive mastitis control program was held in conjunction with the Dairy Branch and a popular dairy forage competition and tour was organized in the North Okanagan to emphasize good crop husbandry. Trials of verticillium wilt resistant alfalfa varieties were extended to various parts of the region and other cropping alternatives were also examined.

Programs to correct the low weaning weights of beef cattle were introduced. The realization that cattle were suffering from a lack of selenium in their diets was a significant breakthrough, and ministry staff worked closely with commercial feed compounders in developing feed formulations for local distribution to correct this deficiency.

Staff worked with producer and municipal organizations on weed control.

Considerable work is underway on land drainage, piggery ventilation and manure disposal.

A major activity in all districts was a comprehensive program of crop variety trials and fertilizer correlation plots. Producer extension meetings were frequently held to discuss the results of this applied research. Staff worked with producer and municipal organizations on weed control.

Horticulture

The horticultural industry received extension assistance with the establishment of vegetable variety and weed control plots in the Creston, Grand Forks, Oliver, Summerland, Vernon and Armstrong districts. Several grower advisory meetings were arranged using information from these plots. A marketing seminar, attended by over 150 industry, trade and government officials, was held at Vernon in November to solve marketing problems in the vegetable industry.

Regional staff are coordinating the ministry's participation in the Canada-wide asparagus research program under the auspices of the Canadian Horticultural Council.

Tree fruit extension staff are working closely with the industry to increase quality and efficiency. A program on pre-harvest apple maturity determination was initiated in co-operation with industry in order to ascertain criteria for establishing optimum harvest dates for apples destined for longhold storage. Horticultural staff continued to introduce and promote the use of chemical growth regulators to minimize thinning costs and to improve fruit quality. An extension thrust on advanced pruning technology continued with over a score of pruning sessions held in orchards complimented by several classroom sessions. Staff promoted trickle and microjet irrigation as a cost-efficient measure.

In addition to using radio broadcasts as an extension tool, a free Code-A-Phone Producer Advisory Service operational on a round the clock basis was extended to include four district extension offices.

Six commercial nurseries participated in the Tree Fruit Certification Program administered by regional extension staff. Over 370,000 fruit trees were inspected and certified to be true to type in 1982. A program to supply specific virus-free budwood to the industry's certified budwood orchard continued to be supported by ministry staff who carried out herbaceous virus indexing of apples and pears.

The ministry provided considerable input into the organization and content of the popular Horticultural Forum at Penticton in November which attracted 400 persons. District horticulturists and branch specialists supported the Master Gardener Program held at Penticton and Kelowna. Creston district staff organized an Agricultural Trade Fair in January which attracted 27 exhibitors and 500 producers.

Specialist and district staff organized advisory meetings with grape producers. Considerable applied research continued on grape variety evaluation, propagation, bunch rot control, grape decline and powdery mildew control. A grape cost of production study was released. The ministry's grape specialist began preparation of a climate and soil atlas to identify optimum grape production sites in the Okanagan and Similkameen Valleys, a project which will be completed in 1984.

South Coastal Region

For the South Coastal region, 1982 was a year of adjustment, financial constraints, good weather and poor markets. In spite of high interest rates and low prices, many parts of the industry showed expansion, good returns and record yields.

The ministry's restructuring and regionalization, begun in 1980, continued to result in increased and more effective extension programming. The South Coastal regional extension service staff expanded during the year and included the establishment of a training position for horticulture.

The five commodity extension committees, first appointed in 1982, continued their work of program planning, co-operative extension liaison with agri-business and farm industry, staff coordination, teamwork and support to the regional director.

Extension

A conscious shift from ad hoc extension activities to more formal planned activities was the main thrust of 1982. A detailed and complete set of extension goals, objectives and activities was developed and confirmed for each commodity.

This change in planning resulted in more diversified and expanded programs. Seminars, workshops, field days and short courses organized by regional staff in 1982 included:

- sheep pasture field day at Colony Farm
- forage and grassland improvement open day at Courtenay
- Vancouver Island dairymen's tour
- cow and calf seminar
- farm computer fair
- veal marketing seminar
- sewage sludge field day
- financial management courses
- sprayer calibration and pesticide workshops
- tax tip seminars for growers and swine producers
- growers' short courses

Extension staff were involved in writing various publications, notably the berry, vegetable, field crops and mushroom production guides. Newsletters and newspaper articles were also prepared along with submissions for airing on local radio stations.

The addition of certain professionals to the Regional Extension Services provided greater capability for applied research and demonstration work. The scope of the ministry's research function was documented for the first time in the publication "Catalogue of Agricultural and Food Research". The emphasis is on applied practical research and demonstration designed to facilitate the technology transfer.

In 1982, some of these research and demonstration projects included: evaluation of forage species, seed multiplication, rush control trials, early corn hybrids evaluation, drainage projects, vegetable variety trials, lime and clubroot control, irrigation and fertilizer trials, vegetable scheduling demonstrations and a pea wilt survey.

Crop Conditions

The Fraser Valley has now experienced three consecutive wet years (1980–82 inclusive). Excessive rainfall occurred in the winter months and generally good weather conditions existed during the growing season. Lack of rainfall during the growing season reduced yields on Vancouver Island, especially forage yields. Improved crop quality was also evident.

Horticulture

Horticulture crop yields were generally very good with excellent levels of production in apples, raspberries, cranberries, blueberries, broccoli, corn, peas, carrots and onions. Lettuce crops suffered 25 per cent (100,000 cartons) loss due to aphids, and bean yields were reduced mainly because of disease problems.

Production was not a major problem but low returns, oversupply, and lack of markets for most vegetable crops presented difficulties for growers.

The impact of the golden nematode quarantine was felt on the Saanich Peninsula. Potato production was prohibited and growers had limited choices in alternate crops. This resulted in short-term oversupply of certain crops and weak markets in the Victoria area.

The cranberry industry continued to expand in 1982.

Berry producers enjoyed a good year. While the wet winter conditions favoured the development of soil borne diseases, the growing season was conducive to good growth and yields.

Strawberry yields totalled 7 520 688 kg (6 565 680 kg in 1981) and were valued at $10,258,000. Similarly, raspberry yields were up, totalling 11 669 319 kg (8 131 687 kg in 1981) and valued at over $23 million.

Blueberry production continues to expand in the Cloverdale, Pitt Meadows and Langley areas and now totals 960 hectares. Production was 4 300 000 kg and valued at $6,300,000.

The cranberry industry continued to expand in 1982. The future is very bright for cranberry production and if current expansion plans are realized, the 1981 hectarage (400 ha) will almost triple by 1984. This year's production totalled 6 300 000 kg and returned $7 million to the growers.

Livestock

Forage crop production is an important adjunct to the dairy and livestock enterprises of the South Coastal region. 1982 was one of the best years for hay and silage.

Most sectors of the livestock industry, apart from hog producers, continued to suffer from depressed prices and increased production costs. No significant change in the beef industry occurred but there was some reduction of herds, especially by the smaller, part-time breed producers.

Sheep production, while attractive to hobby farmers, remains uneconomical. Predation, mostly by dogs, depressed prices and custom killing costs at packing houses discourage any real potential for the expansion of sheep production.

Swine production changed very little over the year although the number of producers declined slightly. Higher pork prices and lower interest rates relieved some of the cost squeeze being felt by pork producers.

Veal, rabbit and goat production remain steady, exhibiting good growth potential. They share common problems of deficient marketing and processing. The rabbit processor, Ra-Bitco in Mission, is now under new management and is actively marketing local production.

Dairymen in all districts acquired computerized feeding systems in an effort to increase efficiency.

The poultry industry suffered major economic problems. Massive inflows of chicken from other provinces put considerable pressure on producers' prices. In addition, the market for poultry meat was sluggish and production was down over 10 per cent from 1981.

Dairying remained the major agricultural industry in the area with cash receipts exceeding $200 million. Fluid milk sales decreased significantly thus lowering fluid and quota utilization and reducing quota milk prices. Average herd sizes remained steady at about 70 milking cows. Dairymen in all districts acquired computerized feeding systems in an effort to increase efficiency. The good pasture and forage year was also conducive to good milk production and dairy management.

Land-use Planning

In a region with an urban population in excess of two million, the pressures on existing farmland remain great. Urban development, transportation and utility corridors, water management and establishment of industrial centres are eroding the agricultural land base in spite of the provisions of the *Land Commission Act*.

Land use issues dealt with by technical planning committees, resource management committees and special task groups included: Agricultural Land Reserve exclusion of the Gloucester Properties (253 ha) in Langley; highway designation of the Gilley route in Richmond for the east-west connection to the new Annacis Highway; establishment of a map reserve on Malcolm Island; Boundary Bay reactivation, and finalization of designating deferred planning areas in proposed provincial forests.

Special Projects Branch

The Special Projects Branch is a new area of responsibility created by the ministry when the Horticulture Branch was dissolved and its responsibilities assigned to the regions or amalgamated with other branches.

The Horticulture Branch was established in the 1890s to improve the nursery stock for the expanding tree fruit industry in the province. As production increased and services expanded, horticulturalists in the branch maintained a broad spectrum of horticultural knowledge. Many developed specialties in order to assist producers of over 60 crops valued at the farmgate at $200 million annually. Although the Horticulture Branch no longer exists, fully-qualified horticulturists continue to serve farmers throughout British Columbia under the guidance of regional directors.

. . . special attention was given to provincial grape and wine policy in an effort to determine the future direction of grape production. . . .

The Special Projects Branch is responsible for horticultural planning and program evaluation, farm labor, agricultural education, agrometerology, international agricultural exchanges, and visits by senior foreign agriculturalists. The branch director represents the ministry on some provincial boards and societies.

Tree Fruits and Grapes

An adequate supply of farm labor was available during 1982 which coincided with a production year that presented an excellent quality crop. This was in contrast to the usually short supply of labor to harvest apples, pears, grapes and tomatoes, especially during the second half of September. Horticulture crop yields were generally very good with excellent levels of production and quality in apples. Grapes had a good sugar development but the acid level was higher than some wineries prefer.

During the year, special attention was given to provincial grape and wine policy in an effort to determine the future direction of grape production in the province. In this connection, many meetings and communications dealt with the relationship of provincial policies and programs to proposed changes in grape production.

Berry Crops

The Fraser Valley produced record crops of raspberries, blueberries and cranberries. The raspberry crop this year was hand harvested because of the plentiful supply of farm labor. Normal production loss through mechanical harvesting was thus avoided.

Allotment Gardens

A close association with the allotment garden program has been maintained to assist in the successful transition of the existing trial sites to management committees. Information is supplied to people wishing to start an allotment garden. Details on the preparation of simple contracts and cultural information are also provided.

Special Branch Activities

The 1982 National Agricultural Employment Development Conference was held in Victoria October 19, 20 and 21. The director of the Special Projects Branch, in conjunction with Employment and Immigration in Vancouver, was responsible for planning the convention, organizing the meeting facilities and speakers and arranging for the post-convention tour of farms and research facilities.

The director also organized and chaired the annual meeting of the Provincial Farm Labor Committee which was held on December 7, 8 and 9. Part of the agenda dealt with proposals and ideas raised at the national meeting held in October, while other areas of concern included changes in legislation affecting Workers' Compensation and the Labor Code.

Farmland Resources Branch

During 1982, this branch assumed the responsibilities of the former Property Management Branch. Now all land-use related activities of the ministry including legislative review, planning, resource allocation and land administration are under the broadened mandate of the Farmland Resources Branch. The main function of the branch is to maintain and enhance the farmland resources of British Columbia.

Land Use Issues

Deferred Area Planning

Regional staff participated in the preparation of 21 Crown Land plans under the Deferred Area Planning Program of the Ministry of Lands, Parks and Housing. Potential arable lands suitable for agricultural development, via sale to farmers, were identified. Formal approval of these plans is pending but some blocks of land will be available in 1983.

Branch staff worked with producer groups to identify new opportunities for agriculture. One example was the preparation of a plan to expand the beef industry in the East Kootenays.

Environmental Impact Assessment

Major projects reviewed by the branch for their impact on agriculture included proposals regarding 12 coal mines, eight metal mines, nine liquified natural gas/petrochemical projects, two highways, a transmission line and one natural gas pipeline. These reviews outlined the ministry's position, preferred route/location and suggestions on methods to minimize the project's impact on agricultural operations.

At a public hearing of B.C. Hydro's proposed Peace River Site C Project, branch staff provided details on the agricultural land loss that would ensue from this project's flooding of over 3200 hectares of agricultural land. Farmland Resources staff also sat on the ministry's panel at the Utilities Commission hearings to present and respond to questions on the ministry's Blue Paper, which identified agricultural considerations to be addressed by the Utilities Commission.

At a public hearing of B.C. Hydro's proposed Peace River Site C Project, branch staff provided details on the agricultural land loss that would ensue from this project's flooding of over 3 200 hectares of agricultural land.

In addition, branch staff contributed to the federal-provincial Fraser River Estuary Management Study to ensure that the proposed management plan recognized and protected the valuable agricultural land base of the delta.

Farm and Stream

Branch staff, with the assistance of the Water Management Branch, Ministry of Environment, published a brochure on farmland drainage. This publication outlines the legal requirements for drainage under the *Water Act* and the *Federal Fisheries Act*, as well as points to consider when planning land improvement programs involving water.

This brochure was the result of a series of interagency meetings to resolve problems encountered by farmers on Vancouver Island attempting to drain their fields.

Linear Developments

The branch initiated and is co-ordinating a research project funded through ARSDA to investigate the opportunities and risks presented to agriculture by linear development. The project will provide a report with inventory of transmission lines, pipelines, highways and railways existing and proposed; an annotated bibliography; case studies of a pipeline and transmission line; and recommendations regarding policies which minimize adverse impacts of such developments on agriculture.

Farmland Taxation

The Provincial Government has been considering several changes to the system for assessment and taxation of property. A major research paper was completed documenting how the existing system is applied to farmland. No major change to shift increased property tax burden to farmland is foreseen.

Agricultural Land Reserve

The Agriculture Land Reserve fine-tuning program continued through its third year as a co-operative venture among the Provincial Agricultural Land Commission, the Soils Branch of the Ministry of Agriculture and Food and the Ministry of Environment's Terrestrial Studies Branch.

Work was completed on a soil moisture study of the Duncan-Nanaimo area while mapping the soils of the Parksville-Qualicum Beach area began. The soil moisture study developed a workable methodology for calculating irrigation requirements for eastern Vancouver Island.

The West Chilcotin climate network, consisting of temperature and precipitation stations, is in the second year of operation. The Provincial Agricultural Land Commission, in conjunction with local government, uses information produced by these studies in fine-tuning the Agricultural Land Reserve boundaries.

Green Zone Program

In 1981 a section of the proposed *Land Use Act* was formulated to define the scope and content of local bylaws regulating the location, siting and size of intensive agricultural operations. This proposed new legislation has not yet been approved. However, the concept continued to receive widespread support and approval of the necessary amendment to the *Municipal Act* is expected.

Two regional electoral districts as well as the municipal districts of Langley and Chilliwack have all approved land-use regulations based on a model bylaw designed by the Farmland Resources Branch. Initially, the major focus of these regulations is to establish reasonable criteria for siting and size of swine operations.

Lease Management

The Farmland Resources Branch administers the lease management program of the Provincial Agricultural Land Commission. Currently, 131 properties held by the commission are under leasehold. Two more properties were added for leasing in 1983. During 1982, 11 new leases were negotiated and 24 rental reviews undertaken. Revenue from rentals and sale of improvements totalled $442,000 plus $180,000 earned from the sale of one property. Several of the leased properties are used for research projects including plots for crop field trials and several manure and sewage handling and disposal studies.

Provincial Farm Operations

Although no final decisions were made, major reviews were undertaken of the provincial farm operations of Colony and Tranquille. The reviews suggested emphasis shift from producing food for adjacent health institutions to focusing on adaptive research, technology transfer and demonstration. Colony Farm research activities already include sheep pasture management trails, seed potato certification and corn variety trials.

Tranquille Ranch with a 150-cow herd, used open range and an irrigation system for forage production. Several crops and alternative systems for harvesting, storage, handling and feed were being demonstrated. The feasibility of offering the Steeples, Point Vee Bar and Lost Creek Ranches for private lease were reviewed.

Problem Wildlife

Crop and livestock losses to wildlife (i.e. cattle—wolf, orchard—deer, forage—elk, crops—waterfowl) continued to be a major problem. Industry efforts were unsuccessful in obtaining legal compensation from wildlife agencies for damages where animal control measures have failed. At the end of the year, two cases were still before the courts.

Specialist and Regulatory Services

Crop Protection Branch

The function of the Crop Protection Branch is to provide information on current and ecologically sound methods of insect, plant disease and vertebrate pest management and to prevent the introduction and spread of pests in the province.

General Pest Conditions

Vegetable crops—One-quarter of the lettuce crop in the Cloverdale area worth one million dollars, could not be marketed because of infestations of the lettuce aphid. Control methods for this new pest were developed and recommended for grower use in 1983.

A serious outbreak of bacterial ring rot of potatoes occurred in the Fraser Valley in the fall. The disease was found on 19 farms including two seed farms. Growers have been advised on clean-up procedures which must be carried out over the next one to two years. Bacterial ring rot was not found on Vancouver Island in 1982. For the first time, potato production was prohibited in the Central Saanich area because of the quarantine on the golden nematode.

A nematode specialist was assigned to the branch.

Club root and aphids were two major problems in cole crop production in the Fraser Valley and on Vancouver Island. Aphids have developed resistance to many insecticides and are becoming difficult to control. Pea enation mosaic virus continues to be a serious and widespread disease of peas in the Victoria and Saanich areas.

Severe damage to overwintering cauliflower by ducks (mainly wigeon) occurred in the Fraser Delta.

Tree Fruits—Brown rot was common on cherries and peaches in the Interior. On Vancouver Island, cherries yielded well and had low levels of brown rot. For the first time, bacterial canker was identified as an economic problem on cherries and apricots in the Okanagan Valley.

Low levels of apple scab were reported on Vancouver Island while European canker continued to be a major concern.

Insecticide resistance was discovered in fruit tree leafroller populations in a small area in East Kelowna. Entomologists are concerned that resistance will spread. Apple aphids damaged young apple and pear trees in the Okanagan Valley while mites were a common pest in Vancouver Island orchards.

Starlings were again a serious problem on cherries and grapes in the Interior and on Vancouver Island.

Garden Ornamentals and Vegetables—A biological control program against the winter moth on Southern Vancouver Island appears to be succeeding. The winter moth is an introduced pest which has extensively damaged fruit trees and ornamentals in the Greater Victoria area for the past several years. Two species of parasites were imported from Nova Scotia and released in this area in 1979, 1980 and 1981. Both parasites were recovered from the winter moth in 1982 and entomologists predict winter moth populations will be brought under control within two to three years.

Douglas fir tussock moth defoliated large numbers of shelter belt and ornamental trees in the Kamloops-Okanagan area.

Small Fruits—A wet season in the Interior led to high levels of gray mold on grapes. In the Fraser Valley, there were heavy losses of strawberries from fruit rots and from the soil-borne fungus red steele. Root rots were also major problems in small fruit production on Vancouver Island, but fruit rots were not serious due to dry weather during ripening.

A number of raspberry fields in the Fraser Valley showed a serious decline in vigour and yield. In 1983, a special effort will be made to assess the influence of root rots, wilt organisms and nematodes on raspberry decline.

Starling damage to blueberries in the Lower Fraser Valley was heavy in some areas during 1982. For the first time, several growers erected plastic netting according to ministry recommendations to protect their

crops. The starling problem on blueberrries continues to increase as blueberry hectarage expands.

Field Crops—Alfalfa Verticillium wilt continued to spread in the southern part of the province. The disease is now present in a high percentage of commercial alfalfa plantings.

An outbreak of barley yellow dwarf virus occurred on late planted barley and oats at Vernon. Leatherjackets, the immature stage of the marsh crane fly, were present in greater than normal levels in pasture and hay fields in the Fraser Valley and on Vancouver Island.

Greenhouse, Vegetables and Ornamentals—Dogwood leaf blotch occurred only at low levels in coastal areas this year as a result of drier spring weather. Holly leaf and twig blight continues to be a serious problem for commercial growers.

Two new pests of greenhouse ornamentals, the azalea leafminer and pansy leaf rot, were discovered on Vancouver Island.

Greenhouse vegetable growers successfully controlled two-spotted mite with a predator mite. A parasite was used against the whitefly but results were variable. The integrated use of this parasite, insecticidal soap and a fungus that attacks the whitefly is being investigated.

Leafminers caused serious damage to greenhouse chrysanthemums in the Fraser Valley. Branch members have tested several insecticides and controls are being recommended.

Livestock Pests—Face flies and horn flies were again major pests of livestock in the province. Insecticide-impregnated ear tags were highly effective against horn flies and less effective against face flies. High costs prevented widespread use of ear tags.

Many egg producers achieved good fly control by following recommendations for the integrated use of parasites, baits and short-lived space sprays.

The rocky mountain wood tick was abundant in the Southern Interior of the province and caused the death of at least six steers from tick-induced paralysis.

Killing of lambs by ravens has emerged as a serious problem on Saltspring and adjacent islands, with 100 or more lambs killed in 1982. Discussions with Fish and Wildlife Branch officials were held in an effort to develop a control program.

Mosquitoes—As a result of high river levels during spring run-off, mosquitoes were abundant throughout most of the province. Control agencies were kept active because of the above average number of requests for help. There were no confirmed cases of encephalitis or other mosquito-vectored diseases.

Extension

Staff members gave many lectures, training courses and field demonstrations for farmers, nursery operators, students and home gardeners on modern pest control methods.

A special effort was made to provide growers with information on the correct use of pesticides.

Branch staff prepared extension bulletins, grower newsletters and pest control notes for use throughout the province and they participated in radio and television programs.

A special effort was made to provide growers with information on the correct use of pesticides. A display on pesticide safety techniques was exhibited at three major producer assemblies.

In co-operation with the district horticulturist, a short course for fruit, vegetable and greenhouse growers was held at the Agriculture Canada Research Station at Saanichton. This course was well received and will be presented annually.

A seven-day horticulture course was given to nursery employees in the Duncan to Courtenay area on Vancouver Island.

Diagnostic and Advisory Service

Cloverdale, Victoria and Summerland branch offices answered over 6,500 inquiries from home gardeners and commercial growers. In many cases, these inquiries

necessitated laboratory identification. Hundreds of field calls were made by extension staff. This direct contact with growers is an effective way of monitoring pest outbreaks in the province.

Branch staff at Cloverdale continue to provide a hot-water seed treatment to help vegetable growers control seed-borne diseases.

In Victoria, a code-a-phone was evaluated as one method of handling an increasing number of routine pest control inquiries. Each week recommendations on current pest problems were recorded on tape. Vancouver Island gardeners were able to dial and obtain up-to-date information 24 hours a day. During May to December 1982 over 2,000 gardeners took advantage of this service, thereby substantially reducing the time and costs of providing an equivalent service from a professional staff member.

In January, a nematode specialist was assigned to the Crop Protection Branch at Cloverdale where a new nematode diagnostic laboratory was constructed.

Regulatory

A survey of little cherry disease in the Okanagan Valley was carried out by branch staff in co-operation with the B.C. Fruit Growers' Association. A total of 152 infected trees were found, an increase of 66 since 1981. This increase was due primarily to infestations within a few neglected orchards. Spread of the disease in previously infected orchards was minimal where mealybug, the vector, was controlled.

Branch staff co-operated with the B.C. Nursery Trades Association in the annual pear trellis rust inspection and eradication program. Over 250 infected junipers were destroyed. Only 14 nurseries were certified for shipment of junipers outside the quarantine area.

In 1982 the Crop Protection Branch assumed the administration of regulations controlling bacterial ring rot in potatoes.

During the year, staff developed an interagency contingency plan with the Fish and Wildlife Branch, B.C. Ministry of Environment and the Canadian Wildlife Service to deal with waterfowl kill from pesticides.

Field trials and demonstrations were performed by staff members in co-operation with other ministry staff, Agriculture Canada personnel, other agencies and growers to evaluate insect, disease and vertebrate control methods. Recommendations in the ministry's production guide publications are based in part on the results of these trials.

Included were:

- In a trial at Kelowna, wettable and flowable sulphur gave fair control of powdery mildew on grapes.
- Sterol inhibitors (Vangard and Bloc) gave better control of powdery mildew on apple than wettable sulphur or Easout.
- A study of 60 soils in the Okanagan Valley showed that yet unknown factors or conditions in 70 per cent of the soils could cause apple replant diseases or problems.
- Sixty-nine orchards were sampled for nematodes in the Okanagan Valley; 38 per cent were shown to have high levels of root lesion nematodes.
- In alfalfa field trials in the Interior two European varieties, Vertus and Sverre showed high resistance to verticillium wilt. Winter hardiness and tolerance to bacterial wilt in these varieties are being investigated.

Forty samples of B.C.-grown vegetables and small fruits were collected and sent to the pesticide laboratory, Ministry of Environment for analysis. No pesticide residues above the maximum allowable limit were found.

Dairy Branch

In 1982, this branch moved from Specialist and Regulatory Services to Production Services. The goal of the Dairy Branch is to ensure that the consuming public is supplied with fresh and safe milk, to guarantee just payment to producers for quality supplied and to promote efficient and profitable production of milk and milk products.

Milk Production

The number of approved dairy farms in British Columbia remained the same as in the previous year at 1,126. Milk production increased by approximately 2.5 per cent to 11.2 million litres. The provincial dairy herd increased by 20,000 to 131,000 dairy cows and heifers.

The dairy processing sector underwent considerable change following the discontinuance of Shuswap Okanagan Dairy Industries Co-operative Association and Silverwood Industries Limited. Other dairy plants remodelled to improve their processing capability. Fraser Valley Milk Producers Co-operative Association opened a new plant at Courtenay. The Ministry of Agriculture and Food closed out the processing plants at Colony Farm and Tranquille.

Fluid milk retail sales in milk board areas of production decreased by one per cent to approximately 300 million litres while butter production was up 6.4 per cent to 2408 tonnes. Cheddar cheese production increased 44.6 per cent from 2280 tonnes to 3297 tonnes. This increase resulted from the Fraser Valley Milk Producers Co-operative Association diverting milk from powder production into cheese production. Ice cream mix production was 18275 kilolitres, down 10.6 per cent as a result of cool summer temperatures.

Farm cash receipts from the sale of dairy products were estimated at $218 million. Milk used in fluid retail sales increased by $4.50/hL to $54.78/hL. The butterfat differential, which is based on 3.6 kilograms of butterfat per hectolitre of milk, was 43 cents for each point (0.10 kg) change at year end. The butterfat content is used to calculate the producer's final price.

The nationally set target price paid to producers for their industrial milk was $41.02/hL for the new dairy production year which begins August 1st each year. This price included the federal subsidy for industrial milk which remained at $6.03/hL.

Efforts to improve milk quality by reducing the incidence of inhibitor contamination continued to be successful. Almost every tanker load of farm milk is tested by one of the recently developed rapid detection methods.

Five Year Production Fluid Utilization Summary for Milk Board Areas

Year	Millions of Litres			Per Cent of Production	Per Cent of Quota
	Milk Production	Quota Milk	Fluid Sales		
1978	399.8	314.3	272.5	68.1	86.7
1979	422.2	329.8	284.9	67.5	86.4
1980	443.9	344.5	294.8	66.4	85.5
1981	456.7	358.1	303.2	66.6	84.7
1982 (est.)	467.9	365.5	300.0	64.1	82.0

Milk Quality

The first priority of branch field staff involves regulatory duties to ensure that milk and milk production are of the highest quality. These regulatory activities include annual inspections of all farm premises, transportation facilities, the inspection of dairy plants and dairy product depots and the inspection and approval of milking and milk handling equipment.

In 1982, 1,612 official farm inspections were made as well as 1,521 inspections related to equipment, quality problems and other matters. Plant and depot inspections totalled 91.

Farm milk samples are analyzed regularly at the central laboratory for total plate count, the presence of inhibitors, extraneous water, as well as somatic cell counts. The number of samples submitted for analysis in 1982 totalled 506,419.

Efforts to improve milk quality by reducing the incidence of inhibitor contamination continued to be successful. Almost every tanker load of farm milk is tested by one of the recently developed rapid detection methods. This screening is being done by the receiving dairies and as a direct result, the number of inhibitor violations has been reduced a further eight per cent.

Finished dairy products are monitored regularly for bacterial content, coliform counts, adequacy of pasteurization, yeasts and moulds, and compliance to butterfat regulations. Unscheduled checks are made for contamination and adulteration. The fourth year of the penalty program imposed on producers of sub-quality milk has been completed. Increased levies were collected in the bacterial content and water adulteration categories while levies for inhibitor contamination declined. The annual province-wide survey for contaminants in milk again proved negative. Three processors in the Lower Mainland area reinstituted a quality bonus program based on low bacteria counts.

Extension Activities

Branch staff received 37 consumer complaints, some of which required laboratory assistance to resolve. Twenty-three people suspected of selling illegal raw milk were officially informed of the requirements of the *Milk Industry Act*.

Considerable resources have been directed into rewriting, printing and distributing branch publications such as the *Manual for Tank Milk Receivers, Standards for the Design, Fabrication and Installation of Milking and Milk Handling Equipment*, and *Milk Industry Standards Regulation*.

Branch staff sat on committees related to the milk industry in the province as well as presenting information at courses and seminars for milker trainees, herdsmen, producers, dairy plant workers and tank milk receivers.

Mastitis Control

The mastitis control program underwent a significant change with the introduction of the somatic cell count service for evaluating the udder health of individual animals. This management information was started in April and 90,329 individual cow samples were analyzed during the first eight months. At present 209 herds are enrolled in this program while approximately 50 other herds have been entered on a waiting list until an additional test instrument can be acquired.

Extension activities have included improving and standardizing the cell count interpretation capability of ministry staff. Information bulletins were developed and mailed out with each of the first four somatic cell count test reports. Numerous mastitis seminars which included the National Mastitis Council Slides, California Milk Test (CMT) procedures and talks by veterinarians were organized for producer groups.

Dairy Producers' Protection Fund

In 1982 the Shuswap Okanagan Dairy Industries Co-operative Association was unable to pay their producers prior to amalgamation with the Fraser Valley Milk Producers Co-operative Association. This claim almost depleted the Dairy Producers' Protection Fund. Consequently, the producers have requested that the levy be increased to rebuild the fund at a faster rate and the accumulated total be increased to a more realistic amount.

D.A.T.E.

(Demonstration of Agricultural Technology and Economics)

The D.A.T.E. (Demonstration of Agricultural Technology and Economics) program continued in 1982 to fund projects aimed at demonstrating new advances in agricultural technology.

The following were among the many projects conducted:

- Seed variety trials in the Stikine Valley demonstrated that vegetables such as potatoes, rutabagas, beans, parsnips, cabbage and early sweet corn grow well in the area. A variety of fruits as well as forage and cereal seeds were under evaluation.
- A test for the purpose of controlling and eradicating flies in deep pit layer barns was conducted using permanently installed pressure tank sprayers. Optimum operating parameters were determined for the equipment and recommendations were to be published.
- An integrated pest management program for the major insect pests of lettuce in B.C. including the lettuce aphid was under evaluation. Techniques for sampling lettuce plantings for aphid and caterpillar pests to formulate spray decisions were demonstrated and recommendations were given to growers.
- The demonstration of a water harvester, constructed near Cache Creek, was undertaken to provide water for cattle on dryland range. Methods of evaporation control were tested with the result that a floating cover of foam rubber was installed. The project aimed at establishing the economic benefits of the water harvester.
- A project was begun to demonstrate crop and livestock production techniques to farmers using self-serve audio-visual programs at ministry offices. This entailed the installation of two video-tape playback units and two 20-inch TV monitors. It was expected that an accurate assessment of the potential of this service would be possible later.

Engineering Branch

The Engineering Branch provides an engineering design and advisory service to farmers and ranchers in the province. The advisory service covers most aspects of on-farm engineering needs: drainage, irrigation, farm structures, mechanization, waste management and land and range development. Advisory services are provided through direct producer consultation, short courses, field days, engineering plans, publications and press releases.

On-farm projects requiring engineering advice are often capital intensive. In 1982 farmers placed less emphasis on capital expenditures requesting instead engineering services that emphasized efficiency improvements and corrections of management problems.

Water Management

Branch staff were involved in the implementation of ARDSA-funded regional drainage irrigation projects through participation in the technical sub-committee and through administration of several projects.

Significant time and effort was spent in dealing with fisheries-related environmental conflicts.

Drainage

Branch staff provided an increasing level of advice, design and information for interior wetland development in the Cariboo and Central Interior regions.

Installation of sub-surface drainage systems was slow this year with some contractors reporting a decline in business of about 50 per cent from previous years. However, signs of increased interest in sub-drainage are evident in the North Okanagan as equipment becomes available and farmers recognize the benefits of drainage.

Irrigation

Farmer purchase of irrigation equipment decreased significantly in 1982 due to economic recession and reduced funding available under the ministry's ALDA program.

Producer interest in trickle irrigation systems increased as demonstrated by the good attendance at two trickle irrigation workshops and a summer tour, all organized by branch staff.

A revised Irrigation Design Manual has been issued by the ministry and an Irrigation Handbook prepared for distribution to engineers and designers in the province.

Several projects aimed at improving system efficiency were carried out by branch staff in 1982.

Farm Structures

The farm structures advisory service continued to be one of the most popular branch programs with several hundred enquiries being handled. The estimated value of farm buildings for which planning assistance was provided in 1982 amounted to $8,070,000.

Building renovation and problem solving represented the main emphasis throughout the year as capital expenditures on new buildings and expansion of operations decreased considerably over 1981. Much of the on-farm work done in 1982 in farm structures and waste management was trouble-shooting manure-handling problems and ventilation system faults.

Over 50 requests were received for assistance in designing or improving ventilation systems in calf barns, swine buildings and poultry barns. This work, carried out in consultation with veterinarian and field men from feed and livestock suppliers, has developed out of the successful ventilation seminar and workshop staged for agri-business representatives. Ventilation programs will be further upgraded in 1983.

Well-designed livestock-handling systems and new rangeland fencing methods have proved to be of continued benefit to the beef industry in the Interior.

Waste Management

The waste-management advisory service provides farmers with up-to-date technical advice on waste-management systems, including collection, storage, handling and disposal of waste water, manure and dead animals.

The branch, through research projects, field demonstrations and published extension material, directed its efforts to develop manure-handling systems that minimize odour and nuisance and enhance livestock production. Staff members worked with the University of British Columbia on several research and demonstration projects resulting in some successful swine-manure aeration systems.

Mechanization and Agricultural Land Development

The mechanization advisory service covers a broad range of items, including general farmstead mechanization, forage handling equipment, fruit and vegetable production equipment, land development, and grain harvest, handling and storage systems.

Staff continued to emphasize the development of range renovation equipment. The branch supported the minimum tillage evaluation work in the Peace River region and evaluated native wetland development equipment and vegetable harvesting aids. Staff provided raspberry harvester adjustment guidelines for farmers in the Lower Mainland and worked on farm safety, field sprayer extension programs and grain-handling and drying systems.

Branch staff co-operated with the Workers' Compensation Board in further developing the Farm Safety Program to encompass all farm workers.

A new "power pack" was designed and fabricated to allow increased flexibility in the use of different tractors to pull the ministry's range renovation equipment. Two twelve-foot models have seeded about 2 104 hectares this year.

An analysis of raspberry harvesters provided guidelines, unavailable before, to assist farmers in adjusting machines to minimize harvesting losses.

Branch staff co-operated with the Workers' Compensation Board in further developing the Farm Safety Program to encompass all farm workers.

The Farm Machinery Complaint Program dealt with spare parts and service complaints from farmers. In 1982, most complaints related to the price of servicing rather than spare parts availability.

Unusually wet harvest conditions in the Peace River region in 1982 have prompted many requests to branch staff for advice on ambient-air and heated-air grain drying systems, as well as grain storage and handling systems.

Marketing Branch

The Marketing Branch researches and analyzes market situations and opportunities for agricultural products. These opportunities are encouraged through market development and commodity promotion.

The branch regulates the agriculture product markets through the *Agricultural Produce Grading Act* and the *Natural Products Marketing Act* and undertakes national and international liaison on marketing and market access situations. Extension services are provided to the food processing, retailing, and hotel, restaurant and institutional sectors of the industry through market development activities.

Industry Synopsis

The marketing of agricultural products during 1982 was highlighted in the berry industry with record production in raspberries, blueberries and cranberries. The tree fruit industry had slightly reduced production but very high crop quality promising reasonable returns for the year.

Pork prices continued to strengthen while the cattle industry improved slightly over 1981, but output still fell behind earlier projections. The poultry market had a variable year with input prices, particularly feed, dropping but cash receipts from the poultry industry still lower than the previous year.

Insect and disease problems, adverse weather and American surpluses caused considerable hardships for the vegetable industry. Farm cash receipts from field crops were only half that of 1982 and a worsening situation is predicted for 1983. The nursery industry, which closely follows trends in housing construction had a difficult year but improvements are expected in 1983.

Retail food prices increased moderately in 1982 with Canadian increases at approximately eight per cent, the first time it has been under 10 per cent in five years. The market research and analysis publication, *B.C. Food Markets*, which reports these changes on a monthly basis, has forecasted a continuation of this moderating trend in 1983.

Market Research and Analysis

The market research and analysis unit maintained a full program adding to their publications the *British Columbia Cattle Marketing Guide* and a bi-weekly review of Agri-Commodity and Agri-input costs. This latter publication provides a thumbnail sketch of price and cost trends for the agriculture community.

Ongoing publications of the unit include the *Fresh Fruit and Vegetable Report*, detailing fruit and vegetable unloads on the Vancouver market; *Agrimarket Reporter*, contains price reports of interest to the food industry; *B.C. Food Markets*, reporting retail food

prices, and the *B.C. Weekly Produce Report* detailing prices of local and import products for use by B.C. producers and marketing agencies.

The B.C. Food and Beverage Processors Directory was updated in 1982 with a total of 593 firms listed in 17 categories. Demand for this directory has increased from all sectors of the food industry.

. . . the Marketing Branch played a major role in the formation of the North American Raspberry Council.

Unit staff reviewed market consumption and potentials for a number of regions of the province during 1982. These reports stimulated interest in vegetable production in the Creston Valley, the Thompson-Nicola and to a lesser degree in the Peace River area.

The Research and Analysis Unit, each year, assists both the processors and producers in their annual crop price negotiations through information and analysis of the current market and outlook for the various processing crops under regulation.

During 1982, the Marketing Branch played a major role in the formation of the North American Raspberry Council composed of raspberry producers from B.C., Washington and Oregon along with *ex officio* representation from the state and provincial governments. This council is seen as an excellent mechanism to improve trade relations with the U.S. which consumes 40 per cent of the B.C. production.

A major program of the unit is the monitoring of import commodity prices for possible application of surtax. A request for surtax on yellow onions was successful resulting in an additional $300,000 return to growers.

Market Development

The Market Development sector of the Marketing Branch undertakes the various activities formerly found within Food Promotion, the consumer information service, and the product development and market access services.

Major programs undertaken by Market Development throughout 1982 included the B.C. Food Festival, the B.C. Ferry Program, the B.C. Restaurant Show, two promotion display programs with the Safeway Export Department and the Instore Demo Program.

For the B.C. Restaurant Show marketing staff prepared a display featuring "B.C. Salads Through the Year", promoting the use of fresh and processed B.C. produce for salad bars now used in the restaurant industry.

The food-testing program for the B.C. Ferries Corporation continued until late 1982 when the corporation completed its own testing kitchen at the Tsawwassen Terminal. The program was combined with promotion of various B.C. products to provide product exposure to travellers.

In 1981, Canada Safeway Ltd. set up an export development department which to date has exported close to $20 million of western Canadian products to the U.S., Japan, Australia, Central Europe and Britain. The Marketing Branch has assisted B.C. food processing firms in accessing this major opportunity through joint sponsorship of two mini shows of B.C. products for merchandisers from the U.S. and Japan who are affiliated with the Safeway initiative.

The unit continued to disseminate school information packages on B.C. food products and their use to home economic teachers throughout the province. The retail program consisted of posters depicting B.C. fresh produce and a set of 12 commodity information and recipe sheets.

Market Regulation

Under the *Agricultural Produce Grading Act*, the branch ensures effective enforcement of grading regulations through 120 inspectors supplied by the federal departments of Agriculture and Consumer and Corporate Affairs. As well, the branch determines the short term changes which may be required in order to meet particular commodity marketing circumstances such as those required for rain-damaged cherries or slightly substandard apples.

Marketing Board legislation, the *Natural Products Marketing Act*, is a major branch

responsibility. Branch staff worked directly with the various provincial marketing boards and commissions to ensure legislative requirements were met.

As in the previous year, the three national marketing plans (Egg, Chicken and Turkey) required considerable attention by the branch. In co-operation with federal representatives, the branch and the B.C. Marketing Board reviewed roles and responsibilities in the national marketing plans and began a process to improve national plan operational effectiveness.

The inability of the national marketing plans to quickly respond to national population shifts, changing per capita consumption and increased transportation costs continued to be a major problem. Branch staff prepared and presented a statement of provincial concerns at a national hearing into the distribution of egg quotas within Canada. Marketing personnel also assisted the Hog Marketing Commission in obtaining a change in regulation to acquire additional marketing powers.

In conjunction with other ministry branches, the Marketing Branch held two major seminars on the veal and lamb industry. Both addressed marketing mechanisms for their products through retail and hotel, restaurant and institutional outlets and, in the case of lamb, directly to the consumer.

Marketing personnel were involved in the Alternate Crops Committee on the Saanich Committee. This committee is examining alternatives to potato crops previously grown on golden nematode infested land. Staff also participated in a seminar held at Vernon for the interior vegetable industry to acquaint interior producers with expansion possibilities as well as limitations within their industry.

The Marketing Branch undertook a monthly column in *Country Life* in 1982 entitled "Food Market Line." This column highlights one interesting item from the world of agriculture marketing each month.

Soils Branch

The Soils Branch develops and implements programs that ensure the protection, maintenance, development, and effective use of the agricultural soils resource in B.C. Branch staff activities in 1982 included: providing advice to growers, agri-business, industry, and other government agencies on all aspects of soils; demonstrating soil management techniques to growers and investigating soil and water-related problems; operating the provincial Soil, Feed, and Tissue Testing Laboratory; and providing technical services to the Provincial Agricultural Land Commission.

Advisory Services

Branch staff, located in Prince George, Kelowna, and Cloverdale advised the agricultural industry and other agencies on aspects of soil and water management. Staff estimated available water shortage capacity and maximum irrigation rates on 128 routine soil samples and provided soil related advice relative to eight effluent irrigation projects.

A three-year soil fertility research project in the Central interior region . . . was concluded. . . .

Branch specialists wrote bulletins and articles and made presentations to farm groups on a serious erosion problem on sloping upland soils in the Fraser Valley. Assisting farmers with the adoption of conservation management practices will continue to be a major activity of the branch.

Staff conducted a soil survey of the McMurdo Benches Deferred Planning Area in the East Kootenay Region. Much of the area was found to have soils and topography suitable for range seeding.

A three-year soil fertility research project in the Central Interior region, funded under the Feed Freight Assistance Adjustment Fund, was concluded in 1982. Staff assisted with the entire project and used the data collected to develop new fertilizer recommendations for forage crops in the region.

Staff worked with the Ministries of Health and Environment to develop regulations for the application of sewage sludge to crop land.

Demonstration and Investigation

The Soils Branch initiated or participated in projects to demonstrate aspects of soil and water management and to investigate soil and water related problems. In the Cariboo region, specialists determined that soil acidity is increasing and an extensive liming program will be required in the future. Work was initiated to determine the lime requirement of soils in the region and to evaluate crop response to liming.

A number of soil-test/plant-yield correlation trials were carried out as part of the branch's on-going program to evaluate and upgrade fertilizer recommendations issued by the soils laboratory in Kelowna. In the East Kootenays, current laboratory recommendations for phosphorus and potassium appear to be too high. In the Okanagan, crop yield response to added potassium is minimal, even when soil test levels are relatively low. Research work will continue on these soils. In coastal B.C., the carry-over of nutrients due to previous fertilizations is often sufficient for maximum yields.

At Boundary Bay Airport in Delta, staff continued to develop a water management research project to determine the effects of drainage and sub-irrigation on yields of a range of crops. All water-control equipment has been installed and the first crop year will be 1983.

Staff are evaluating the effectiveness of an interceptor drainage system in controlling soil erosion on a sloping upland soil in the Fraser Valley. Initial results indicate that such a system, combined with appropriate conservation management practices, will almost eliminate overland water movement and soil erosion.

Soil, Feed, and Tissue Testing Laboratory

The soil laboratory received 12,800 samples in 1982, a decrease of 4,000 samples from 1981. The decrease reflects a general reduction in fertilizer use by growers. Fifty-eight per cent of samples were from growers requesting fertilizer and lime recommendations and 42 per cent were in support of research and diagnostic work related to soil fertility and plant nutrition.

The feed and plant tissue laboratory received 5,906 samples, a slight decrease from the 6,218 received in 1981. Thirty-six per cent were from growers and producers and 64 per cent were in support of project and diagnostic work related to soil fertility, plant nutrition and animal nutrition.

Technical Services to the Provincial Agricultural Land Commission

Staff provided technical services to the Provincial Agricultural Land Commission on soils, agricultural capability, land use, and related matters. As a result of applications to the commission for exclusion from, inclusion in, or non-agricultural use within the Agricultural Land Reserve, specialists carried out 34 on-site inspections. Branch reports detailed the soils, land use, and agricultural capability on each parcel under consideration.

As part of the on-going process of fine-tuning the Agricultural Land Reserve boundaries, staff conducted 12 area reviews in various parts of the province. These reviews were required because the available soil and capability information was inadequate. Specialists prepared updated capability reports, maps, and recommendations for each area.

The branch assisted the Provincial Agricultural Land Commission with administra-

tion of the *Soil Conservation Act*. Thirty on-site inspections were carried out and reports submitted. Reports contained recommendations on whether or not to issue a permit, and, if permitted, details on acceptable removal and filling procedures and methods of site reclamation.

Staff aided in the preparation of reclamation procedures required following gravel and peat excavation and with acceptable procedures for placement of fill. Soils Branch personnel also monitored compliance with reclamation orders issued by the commission and submitted reports where compliance was inadequate.

Veterinary Branch

The Veterinary Branch includes field operations and administration, the veterinary laboratory and the livestock brands division. Duties are carried out under the *Livestock Disease Control Act*, the *Meat Inspection Act*, the *Fur Farm Act*, the *Livestock Public Sale Act*, the *Livestock Brand Act* and the *Pharmacists Act*.

The branch administers the *Cattle Horn Act*, the *Livestock Lien Act*, the *Livestock Industry Development Act*, the *Veterinary Laboratory Act* and the pound district regulations of the *Livestock Act*.

The branch initiates and administers programs to control the spread of disease, provides a diagnostic service to veterinarians and livestock and poultry owners and offers information on the treatment and prevention of disease. Branch staff regulate the distribution of drugs and biological products through "lay" outlets. They monitor the sale and distribution of meat and meat products in the designated areas and licence, under the *Livestock Brand Act*, all slaughter-houses and abattoirs, and provide a brand inspection service for cattle moving into, out of and within the "prescribed" area. Staff also monitor problems in the fur bearing industry.

Meat Inspection

One new plant, situated in Pitt Meadows, B.C., was added to the Federal-Provincial Domestic Meat Inspection System. There are now three plants on Vancouver Island and five plants in the Fraser Valley, two of which kill and process poultry.

Total submissions to the branch's laboratory in Abbotsford increased more than four per cent (8,740) with a concurrent increase in specimens of 15 per cent (60,863).

Inspection fees were raised from $6.30 in 1980 to $7.10 for regular hours and from $8.20 to $8.55 per hour for premium hour. This resulted in a 6.5 per cent increase of revenue to $63,550 from $59,700.

Animal Health

Field observations and specimen examinations at the branch laboratory revealed only sporadic occurrences of infectious diseases throughout the province. The only increase of any significance was the incidence of calf scours. This was in spite of an increase in the use of a calf scour vaccine and probably was due to poor spring weather coupled with the fact that the vaccine may not have been used in all areas.

Trace mineral deficiencies are still being encountered throughout the province in spite of an increased use of specially formulated mineral mixes and supplements. Data are being collated from various sources and it is hoped that this will be assembled and published.

A second outbreak of sarcoptic mange in cattle occurred in the Dawson Creek area. Agriculture Canada Health of Animals staff

arranged to use the non-licensed Merck Sharpe and Dohme Inc. product "IVOMEC" (ivermectin). Some 9,500 animals in 48 herds were treated and owners reported an almost immediate relief from scratching and restlessness in the affected animals. No recurrence of the condition has been reported in the area.

Staff visited premises licensed under the *Fur Farm Act* and discussed with mink ranchers problems in the industry. Producers have been consulted with regard to the usefulness of the *Fur Farm Act* to their industry and a review of that act is now underway.

For the second consecutive year there has been a slight reduction in the number of licences issued under the veterinary and medicated feed regulations. This reduction indicates that veterinarians are adequately supplying the requirements of the livestock and poultry industry in the province.

Veterinary Pathology Laboratory

Total submissions to the branch's laboratory in Abbotsford increased more than four per cent (8,740) with a concurrent increase in specimens of 15 per cent (60,863). In spite of higher fees introduced in 1981, production animal submissions continue to rise while companion animal (dogs, cats and horses) submissions are declining.

Branch veterinarians and veterinary pathologists attended and took part in 100 meetings throughout the year. Laboratory staff assisted in courses given at Trinity Western College and held laboratory demonstrations and clinics in conjunction with the courses. A complete lecture series on "Animal and Poultry Diseases" was presented by the pathology staff to the senior students in animal production at U.B.C.

Livestock Brands Division

Discussions continued throughout 1982 with representatives of the B.C. Cattlemen's Association on fee increases for brand inspections. No agreement on the issue was reached. Financial restrictions on service programs make it apparent that a more cost-effective inspection program must be developed and accepted by the industry if it is to continue.

A review of established pound districts in the province under the *Livestock Act* has begun. The object is to ensure that each pound district is now operating under an appointed keeper, if not, it is disestablished.

Animal Health Extension

Several animal health information bulletins were published throughout the year including one on the subject of calf scours. With the recurrence of this disease, the bulletin was widely distributed throughout the province particularly in the interior region.

Branch staff co-operated in the publication of a series of information sheets on the application and interpretation of the somatic cell counter results. This program was initiated by the Dairy Branch. The veterinary laboratory is co-operating by examining milks from suspected herds, in order that the veterinarian and the dairyman can select proper treatment.

With the co-operation of Livestock and Veterinary Branch personnel and local veterinarians, calving management evening seminars were presented to livestock operators at Smithers, Vanderhoof, Prince George, Quesnel and McBride. The branch also provided branding, dehorning and castration field days at McBride and Prince George.

Youth Development Branch

The 4-H and the International Agricultural Exchange program are the two areas administered by the Youth Development Branch.

4-H

The 4-H program is a personal growth program for young people. Membership is open to persons from 9 to 19 years of age with 4-H clubs formed around one of 24 different project areas. Adults from local communities provide leadership for 4-H clubs in co-operation with regional 4-H specialists.

4-H members have the opportunity to acquire skills in several areas:

- communication and leadership skills as a result of managing their own club and taking part in the public speaking and demonstration programs
- technical skills related to the management and care of their projects
- social skills as a result of the interaction with others on district, regional, provincial and national levels.

During 1982, more than 3,832 4-H members and 896 4-H leaders participated in the 4-H program throughout the province. Over 550 4-H members and leaders participated in other major provincial, national and international 4-H programs.

Provincial 4-H Club Week, the annual major senior 4-H event, was held in April. Forty-three members were selected to take part in upcoming 4-H programs. In 1982 these events included the Washington, D.C. National Conference, Interprovincial 4-H Exchange with the other nine provinces, a Western Provinces' 4-H Seminar in Alberta, a summer work exchange with New Brunswick, National 4-H Leaders' and Members' conferences in Toronto, and the National 4-H Citizenship Seminar in Ottawa.

Through these events, 4-H members in British Columbia gained an understanding of Canadian government, travelling in foreign countries, utilization of leisure time, and rural life in other provinces or the U.S.

The co-operative effort involving the Western Indian Agricultural Corporation and the Youth Development Branch to establish 4-H clubs on Indian reservations made good progress in 1982.

Eight 4-H members participated in the International 4-H Judging Seminar held in Regina during the Agribition livestock show. A very successful provincial 4-H Judging Rally was also held at the Pacific National Exhibition.

B.C. hosted the 1982 Western Provinces 4-H staff meeting held at the Sorrento Centre for human development. This annual meeting provides a valuable exchange of information.

The co-operative effort involving the Western Indian Agricultural Corporation and the Youth Development Branch to establish 4-H clubs on Indian reservations made good progress in 1982. Clubs organized and participated in a wide variety of activities. A highlight of the year was the Indian Fall Fair held in Kamloops where excellent displays of 4-H club livestock were presented.

In 1982 the B.C. 4-H Foundation fund achieved assets of over $103,000. Part of the revenue generated goes toward funding the "Foundation One" seminar for 13 and 14-year-old 4-H members. In 1982 the focus of this event was public relations and 48 participants learned skills in photography, television, radio and writing.

A 4-H club member from Abbotsford travelled to England to represent B.C. in the Canada-United Kingdom 4-H Exchange. A total of 90 members participated in the Open House Canada program and visited Ontario, Quebec and the Maritimes.

The annual meeting of the Canadian 4-H Council was held in Victoria in 1982.

International Agricultural Exchange Association

The Youth Development Branch acts as British Columbia's coordinator for the international youth program. The International Agricultural Exchange program (I.A.E.A.) gives rural young people the opportunity to travel to other countries and work on farms. The main objective of the I.A.E.A. program is to provide the participants with training in the agriculture of another country. Participants live as trainees with host families.

In 1982, British Columbia hosted an orientation seminar in Kamloops for trainees coming to the province. Forty-six trainees from western European countries, as well as from New Zealand and Australia, were hosted in B.C. Eleven young people from B.C. travelled to other countries in this program.

Youth Development Branch Program Participation Statistics

	1982	1981	1980	1979	1978
4-H Programs—member	3,832	3,748	3,435	3,620	3,576
—clubs	260	258	243	254	262
—leaders	896	882	824	825	776
I.A.E.A.—trainees to B.C.	46	52	36	33	40
—trainees from B.C.	11	5	16	11	11

Production Services

Apiculture Branch

The Apiculture Branch provides specialist service and advice to honey producers, associations, processing and marketing firms and organizations as well as to fruit growers and seed growers concerned with planned pollination programs. It undertakes microscopic analysis of bee diseases as well as quality determination of honey and other apiarian products. The branch maintains a number of part-time apiary inspectors throughout the province.

Crop Review

The number of active beekeepers in the province increased substantially in 1982 by 812 for a total of 6,341. Colony numbers were up seven per cent over the previous year. The total honey crop amounted to 2,287 tonnes, an increase of 113 tonnes over 1981.

Total value of the honey crop was $4,775,359. The value of other beekeeping products and services such as beeswax, pollen and pollination was $350,000. Wholesale prices for honey ranged from $1.37/kg to $1.43/kg while honey sold at the farmgate brought $2.42/kg.

Because of surplus stocks, the price of beeswax declined from a high of $5.08/kg in early 1981 to $3.75/kg in 1982.

The number of active beekeepers in the province increased substantially in 1982. . . .

The supply of package bees was plentiful although inclement spring weather resulted in poor matings of early queens. Many early queens in package bees were superseded with losses as high as 15 per cent. Cost of 0.91 kg package of bees delivered at destination was $26 to $30 while queens cost $8.

Branch Programs

Extension and Applied Research—Losses due to bear predation were identical to those of 1981 at 184 damaged hives. The value of honey and equipment destroyed was $27,678. Since 1963, beekeepers have lost 5,539 hives and honey valued at $525,922. Producers again took advantage of the "Beeyard Bear Protection Incentive Program". Grants helped producers finance construction of bear-proof electric fences for newly registered apiaries.

Branch staff were involved in a D.A.T.E. project to investigate methods of overwintering queens produced in British Columbia for use in package bees or divisions the following spring.

Pollination studies using honeybees and beehive inserts to distribute hand collected pollen throughout apple orchards continued. In the orchard where this pollination demonstration was carried out, 16 hives of bees equipped with beehive inserts distributed 300 grams of pollen onto the blooms of 750 trees at a cost of 70 cents per tree for pollen. Production and quality of fruit were outstanding.

A honeybee stock improvement project funded under ARDSA enters its final year in 1983 with trials carried out at Powell River and Vernon. A total of 225 packages of bees were produced for "in project" use, as well as 500 queens for test stock and breeder selection.

Poor weather adversely affected attempts to increase the population of leafcutter bees, *Megachile rotundata*, used in alfalfa seed-producing demonstration projects in the Okanagan and Cariboo. Improved weather conditions in the Cariboo resulted in the production of 400,000 healthy bee cells.

Over 400 producers attended two beekeeper field days at the Poultry Test Station in Clearbrook and the Beaverlodge Research Station (Alberta). Other local beekeeping field days were held at major centres throughout the province. Fourteen information and demonstration seminars were held to satisfy producer requests for information on the branch's queen bee rearing program. A package bee and queen bee production course is planned for the summer to train interested producers.

Regulation—A total of 8,500 colonies were inspected. The incidence of American Foulbrood disease increased from 3.67 per cent in 1981 to 7 per cent in 1982. Also recorded were 305 cases of sacbrood and 313

of chalkbrood, a fungus disease now widespread throughout Canada.

Contingency plans have been updated to deal with the possible introduction into British Columbia of the African/Brazilian hybrid bee, or the *varroa* and *acarine* mites. None of these pests are now in the province.

Regulations to the *Bee Act* have been drafted and are expected to be approved during 1983.

Field and Special Crops Branch

The goal of the Field and Special Crops Branch is to guide the industry in the production of a wide range of crops, to reduce production losses due to weeds and to assist in serving urban horticulture clientele. The branch conducts applied research, development and extension activities in crop production, range management and weed control and administers the *Seed Grower Act*, the *Weed Control Act*, and the *Seed Potato Act*.

Cereal and Oilseed

Total production of major cereals and oilseeds increased in spite of adverse weather in the Peace River region. Hectarage devoted to wheat, oats and canola (rapeseed) increased while hectarage of barley declined. Estimated 1982 hectarage and yields of harvested grain were as follows:

Crop	Hectares	Yield (kg/ha)
Wheat	69 400	1 990
Oats	33 400	2 003
Barley	98 100	2 198
Canola (rapeseed)	60 600	924
Rye	9 100	1 537

Much of the crop required artificial drying because of inclement weather during harvest. Approximately 25 per cent of the crop remained in the field and will require harvesting in spring 1983. Present grain prices are substantially lower than in recent years.

In a continuing effort to improve production, branch specialists conducted grain variety tests and performance demonstrations in the Peace River and other regions. Three B.C. select seed growers produced foundation seed of the new early maturing barley variety, Otal, and one produced foundation seed of the new medium barley variety, Diamond. A total of 1 882 hectares of pedigreed cereals were produced in 1982.

In the Peace River region, a project comparing zero tillage to conventional tillage methods continued. Four fields of wheat, two of barley, one of winter wheat and one of fall rye, were seeded during the year. Indications are that barley may be better suited to zero tillage management than wheat.

Forage Seed

Total area in forage seed declined 30 per cent in 1982 to 12 400 hectares, of which 11 400 hectares were located in the Peace River region. There were 3 122 hectares in pedigreed forage seed which were inspected for certification by the Canadian Seed Growers Association. Creeping red fescue is the major species, followed by timothy, bromegrass, alsike clover, orchardgrass, red clover, birdsfoot trefoil, alfalfa and streambank wheatgrass.

Branch specialists coordinated the distribution of foundation seeds for the Cana-

dian Forage Seed Project. Two seed growers produced foundation creeping red fescue and timothy seed for this project.

Progress was made in using leafcutter bees for pollinating alfalfa for seed production in the Peace River area. A new experimental site was started in the Cariboo during the year which will enable the ministry to study the management of leafcutter bees and alfalfa under variable weather conditions.

Branch specialists continued to monitor the test plots established under the B.C. Seed Crop Evaluation Project. This project is funded jointly by the Ministry of Agriculture and Food, Agriculture Canada and the seed trade. It is providing valuable information on B.C.'s potential for forage seed production.

Forage Crops

Total provincial production of hay and silage crops was estimated to be 1 710 734 tonnes of hay equivalent. Prices of B.C.-produced hay ranged from $80 to $160 per tonne, depending on source and quality. Imports of alfalfa hay from Washington State were 99 917 tonnes for the first nine months and could reach 126 000 tonnes for the year.

Work is continuing in the search for Verticillium wilt-resistant varieties of alfalfa. . . .

The 1981 census of agriculture reported 336 586 hectares of total hay and silage, an increase of approximately 40 per cent since 1971. This was made up of 119 355 hectares of alfalfa hay, 179 466 hectares of other tame hay and 37 765 hectares of cereal and other fodder crops. In addition, there were 274 770 hectares of pasture.

New fertilizer recommendations for Central B.C. have been developed as a result of a major fertilizer/crop correlation study completed during the year. These improved recommendations will enable farmers to apply optimum rates of fertilizers for better production and efficiency.

Extensive orchardgrass and ryegrass variety trials were conducted in the South Coastal region. These trials will provide information for licensing of Prairial orchardgrass and possibly five perennial ryegrass varieties. During 1982, 16 new orchardgrass and 10 new perennial ryegrass varieties were established in an ongoing program to identify superior varieties for use by B.C. farmers.

Work is continuing in the search for Verticillium wilt-resistant varieties of alfalfa and several new selection trials were established in Central B.C. Vertus and Trumpetor are wilt-resistant varieties now licensed for sale in British Columbia. Peace, a new hardy variety, shows promise in central and northern regions.

Silage Corn

The total area planted to corn in 1982 remained stable at approximately 11 600 hectares. Good yields of quality forage estimated at 13 tonnes per hectare of dry matter were obtained.

The ministry has widely promoted field corn because of its productive potential and nutritive value in dairy and beef rations. New improved varieties were tested in 25 locations in co-operation with Agriculture Canada.

Potatoes

As well as higher yields, the total area planted to potatoes increased from 3 280 hectares in 1981 to 4 033 hectares in 1982. However, the combination of low market prices and high production and grading costs resulted in net losses to some growers. Production of commercial and seed potato stock amounted to 48 595 tonnes produced in 1982.

British Columbia is noted for technological advances in production of high quality virus-free seed potatoes in the Pemberton and Cariboo seed control districts. These advances involve the use of heat therapy and meristem tip culture to eradicate potato viruses X and S.

Branch specialists tested and demonstrated another meristem culture technique using chemically-sterilized potato sprout

tips to produce virus free plants. These plants are grown in a greenhouse on the farm and used for stem cutting propagation. Six to 10 virus free stem cuttings are multiplied for three years to provide one tonne of tubers which are used for production of elite seed.

These tests have demonstrated that tissue culture by the grower is feasible. In 1982, 413 hectares of elite, foundation and certified seed were produced.

Other activities relating to improvement of potato production included the testing of new varieties, selection for golden nematode resistance, screening of new herbicides, testing of Saratoga chip quality and the new plant growth regulator, Nitrozme.

Nursery Stock

Sales of British Columbia ornamental nursery stock had an estimated farm value of $26 million in 1982. The growing season was favourable with growth extending well into the fall. Christmas tree production continued to be a prosperous industry, well suited to small part-time farming. Douglas fir continues to be the most popular species.

Ministry staff conducted 12 research projects for improvement of nursery stock. Three fertilizer trials were conducted to improve plant nutrition of container grown stock. Three trials were carried out to test various algaecides for control of algae, liverwort mosses in rooted cuttings and liner stock.

Sales of British Columbia ornamental nursery stock had an estimated farm value of $26 million in 1982 . . . Christmas tree production continued to be a prosperous industry. . . .

Other research projects included trials for crown gall control, Swiss needle cast control in Douglas fir and propagation work. Results of these projects will be included in future recommendations to growers.

Greenhouse Crops

The greenhouse industry in British Columbia remains viable and showed some growth in 1982. The 1981 census of agriculture indicated a total of 976 247 m^2 of greenhouse and mushroom crops of which more than 810 000 m^2 are in the South Coastal region. Greenhouse tomatoes, cucumbers, lettuce and ornamentals are the major crops with an estimated farm cash value in 1982 of $36 million.

The greenhouse growers research committee initiated an energy conservation project to identify means of reducing energy consumption and finding alternate energy sources. As a result, most growers are now using conservation techniques such as reduced night temperatures and later plantings. Energy costs continued to be of primary concern to producers.

Other research projects included a variety testing program that identified superior varieties of vegetables. A plant nutrition program evaluated fertilizer practices that could contribute to increased yields.

Range Development

Heavy summer rains produced excellent forage growth and improved range condition for fall grazing. There are approximately 1.1 million hectares of open grassland range in British Columbia and 9.2 million hectares which is primarily forested range but also includes wet meadows and alpine range. These Crown ranges provide about 900,000 animal unit months of grazing, supporting approximately 200,000 beef cows with calves. In addition, approximately 500 000 hectares of range is under private ownership or on Indian Reserves.

Branch specialists were active in improvement of Crown range through coordinated resource management planning. About 131 areas are now under some form of coordinated planning and many of these plans were reviewed and expanded during the year. Branch staff assisted the Engineering Branch in coordinating the use of the two range disc-seeder-packer units. In total, about 1 880 hectares of unproductive Crown and privately-owned grasslands were seeded in 1982.

Significant advances were made in technology development related to range improvement. Research conducted as part of the Semlin Ranch project demonstrated that it is possible to obtain 1 788 kg per hectare per year from well-fertilized range seeded to crested wheatgrass. This is four times the amount obtained from unseeded range. Branch specialists conducted 19 applied research projects related to range seeding, weed control and other aspects of range improvement. Four permanent 50 metre line range transects were placed on strategic sites to gather long-term information on range ecology.

Weed Control

The *Weed Control Act* enables the Minister of Agriculture and Food to make agreements with regional and local governments respecting the costs of noxious weed control. In 1982, ministry grants of $491,400 were paid to these agencies, including 12 livestock associations willing to undertake weed control activities. Staff members were active on weed control committees to ensure programs were cost effective. The grants resulted in total expenditures of $1,185,000 for weed control by these agencies.

In 1981, Cabinet approved an accelerated three-year program to control knapweed. As part of this program, the branch coordinated the activities of numerous public and private agencies engaged in preventing spread of knapweed. Extra resources were employed in four major components of the program: publicity and advertising, equipment and materials, professional services including research, and increased weed control grants. Publicity and advertising included distribution of knapweed alert brochures, infested hay warning posters, bumper stickers, and presentations to numerous agencies. Funds for equipment and materials were used to purchase additional knapsack sprayers for loan to farmers and ranchers.

Biological control offers the best long-term solution to the knapweed problem in British Columbia. A grant of $15,000 was made for biological control research involving collection and screening of bio-control agents and competition studies of agents already established. Two additional agents were released during the year. Biological control was carried out in co-operation with scientists from Agriculture Canada and the University of British Columbia. In total, 10 bio-control agents have been released including seed reducing moths, root-boring beetles, leaf rusts and soil borne fungi. As these agents become adapted they are expected to reduce knapweed to below its economic threshold.

A total of 56 applied research projects were conducted on numerous sites across the province by branch specialists. These projects tested herbicide efficacy, timing and rates of application, allelopathic effects, weed seed germination, residual effect, new herbicides and new application equipment.

Urban Horticulture

During 1982, the first Master Gardener program in Canada was established in the Lower Mainland. The Master Gardener program is a popular and imaginative way of encouraging amateur gardeners to provide production information to home gardeners.

Thirty experienced gardeners completed an intensive training course to become certified master gardeners. In exchange for their training, the master gardeners volunteered to staff garden information clinics throughout the Lower Mainland. In addition to staffing these clinics, master gardeners extended information to the public by speaking to local groups and using the public media.

Similar training courses were held in Penticton and Kelowna to prepare master gardeners in the Okanagan Valley for the 1983 growing season.

The urban horticulturist completed variety evaluations of bedding plants. . . .

The urban horticulturist completed variety evaluations of bedding plants for the All-America selection trials in co-operation with the University of British Columbia. The results of the trials will be used to identify superior plant varieties for introduction to

the bedding plant industry. Other program activities included an evaluation of container-grown, small-fruited tomato varieties, a display of small space gardening for the urban public, preparation of the newsletter "Urban Gardener", and horticulture judging at fairs. These activities are all designed to promote excellence in home gardening.

General Activities

Branch specialists contributed to extension events including field days, seminars, workshops and tours. They served on regional, provincial and national committees, such as the Canadian Expert Committee on Weeds, the Canadian Seed Growers' Association, the Canola Council of Canada, the B.C. Pesticide Committee, the Greenhouse Growers' Research Committee, the B.C. Nursery Trades Association, the B.C. Forage Advisory Council, the B.C. Field Corn Committee, the B.C. Range Committee, the Knapweed Action Committee, and the regional extension committees. In addition, staff members participated in various interagency programs such as weed control committees, regional coordinated resource management, pesticide applicators courses and the National Council for Therapy and Rehabilitation Through Horticulture.

Livestock Branch

The goal of the Livestock Branch is to help producers improve efficiency of livestock production, to administer programs that identify animals of superior genetic value, to identify and publicize improved feeding and managerial practices, to maintain a corps of specialized commodity advisors and to develop and administer legislation related to activities of the branch.

Beef

Average feeder cattle prices during the year were slightly above those of 1981, but this gain was offset by reduced prices for cows which moved at lower prices. The total 1982 kill of cattle of B.C. origin at approved plants was 88,456 head, up 18.2 per cent over 1981 and considerably exceeded the national increase of 2.2 per cent during 1982.

. . . the Information and Livestock Branches presented an hour-long television program on beef herd management. . . .

The Livestock Branch has received approval for a reorganization of the resources needed to ensure the development of the "extension information packages" program. The purpose of this reorganization is to ensure that all branches and technical specialists connected with the beef industry allocate their resources and work together in the production and delivery of this program.

In March, 1982 the Information and Livestock Branches presented an hour-long program on beef herd management which was televised on the Knowledge Network and beamed via satellite to eight community colleges where ranchers and ministry staff viewed the show and asked questions on the air. Although an estimated 500 producers saw the show, there are still some serious limitations to the number of beef producers who can readily access this method of communication. Response to questionnaires on the program, however, indicated producers were enthusiastic and supportive of branch attempts to explore new means of delivering information programs.

The *Beef Feeding and Management Guide* published by the branch to assist producers in backgrounding and finishing cattle, was widely used.

Entrants to the 1982-83 bull test stations at Tranquille were only 87 head due to a delayed negotiating process over charges to be levied for the service. The present system

for payment by yardage per day and cost per pound of gain for the first time approximates the system charged by commercial feeders.

Two projects were funded in 1982 by the Cattle Horn Fund while a previous project on the advantage of feeding implanted bulls to finish was completed. Although a number of these bulls failed to make the "A" grades, the project was financially successful.

Two new projects funded were financial assistance to the Fountain Valley Range Patrol Association for surveillance work, and assistance to Northern Lights College at Dawson Creek to investigate economical feeding regimes for wintering beef cows, including the value of ammoniated fescue straw.

Two projects currently under review involve equipment to establish embryo transplant centres.

Swine

Hogs of B.C. origin slaughtered at approved plants were 324,874, down 4.9 per cent over 1981. In addition, 15,160 head were slaughtered in U.S. plants. Canadian slaughter during the same period was 12,886,106 head, down 2.3 per cent. The weighted average price for Canadian hogs was 84.9 cents per cwt, up 19 per cent over the 1981 average weighted price of 71.3 cents per cwt.

Fewer producers than expected used the Swine Record of Performance program in 1982. It is expected a minimum of 16 producers will be enrolled by 1983 if Colony and Tranquille farms no longer carry their hog units.

The branch has begun preparation of a home study swine course designed to upgrade swine producers' knowledge of all phases of the industry. Enrolment fees are expected to cover most of the program's costs. The course will be offered in late 1983 or early 1984.

The swine industry took positive steps to bring the marketing of hogs under a commission which will serve as a single desk selling agency. This commission will be in operation in early 1983.

Dairy Cattle

Enrolment in the Dairy Herd Improvement program decreased during 1982 by 13 producers to 521 herds, while cows on test were down from 38,262 to 36,612. Average dairy production decreased by 162 kg of milk, 5 kg of butterfat and 2 B.C.A. (Breed Class Average) points for milk and fat, respectively.

The dairy short course held at Chilliwack in February had the largest turnout to date with over 500 participants.

In co-operation with the dairy laboratory, the branch offered the somatic cell count program to 183 Dairy Herd Improvement participants. The need for this service was one of highest priority identified by producers in a study done by the branch in 1979. The dairy livestock specialist has worked closely with the staff of the Dairy Herd Improvement Division and producers to develop industry understanding of the program.

The dairy short course held at Chilliwack in February had the largest turnout to date with over 500 participants.

Branch staff assisted the B.C. Jersey Breeders in organizing a ministry banquet for the Tenth World Conference on Jerseys held in Vancouver in September.

Sheep

Sheep and lambs of B.C. origin slaughtered at approved plants totalled 9,841, down 11.3 per cent from 1981 levels. The Canadian slaughter total was 238,909 head, up 12.7 per cent. The B.C. reduction over 1981 figures does not represent reduced production but rather reflects the increasing number of slaughterings at alternative locations.

Branch staff co-sponsored a successful sheep symposium organized by the B.C. Sheep Breeders at Kamloops in February. The branch assisted in the freight costs of moving 12 B.C. ram lambs to the Alberta test station.

The sheep specialist was a member of the steering committee responsible for the ARSDA-funded study of the sheep industry.

Veal

British Columbia veal slaughtered at approved plants was 16,823 head, up 11.6 per cent over 1981. The Canadian comparison for a similar period was 446,502 head representing an increase of 9.2 per cent.

Most requests for assistance in production and marketing technology came from producers in the Lower Mainland region. The dairy livestock specialist assisted the South Coastal Regional Livestock Co-ordinating Committee in developing a regional program for the commodity.

Horses

The swine specialist was appointed during the year to act as part-time specialist with the horse industry. He visited Alberta to study the province's program for the horse industry and has continued to meet, whenever possible, with horse organizations in British Columbia.

Goats

The dairy livestock specialist presented material at three meetings involving 140 goat producers during the year. The dairy laboratory continues to provide the industry with milk testing services.

Legislation

Branch administration of the *Livestock Protection Act* became increasingly complex as regional districts established their own partial or complete legislation dealing with dog control. Many municipalities are opting for coverage under at least Sections 6 and 8 of the Act. The Society for Prevention of Cruelty to Animals has asked the branch to amend certain portions of the Act. The branch has requested the Attorney General to allow Sections 3 and 16 (h) of the Act to be made applicable under Section 14 of the *Offence Amendment Act* regulations. This change would allow the RCMP to issue tickets to dog owners who fail to licence dogs, rather than necessitating court action as is now the case.

Regulations pertinent to the *Livestock Protection Act* were revised during the year and came into effect January 1, 1983. Fee structures were also revised and will in most cases be lower than those charged in most municipalities.

An attempt to obtain a compensation clause in the revision of the *Wildlife Act* was not successful. The clause would have compensated livestock owners for losses inflicted by wildlife.

Other Extension Activities

All specialist staff were involved in assisting other branches and producers in dealing with the development and delivery of commodity programs. The beef cattle, sheep, swine and dairy specialists have been active at a senior committee level in preparing submissions regarding present and potential uses of Colony and Tranquille Farms.

The bulletin, *Mineral Analyses of British Columbia Feeds 1969–80* produced by the branch during the year will provide feed companies and others formulating mineral rations with information which should allow them to prescribe more appropriate mineral mixes for livestock.

Poultry Branch

The Poultry Branch provides a specialist extension service to all segments of the poultry, egg and rabbit industries in the province. Staff members help producers solve production problems and assist in the development of modern and efficient production units. The branch provides advice on government programs, new techniques

and conducts and disseminates information on research applicable to poultry operations. It acts as a liaison between producers, marketing boards, national agencies and other industry associations. The staff works closely with other branches of the ministry and other government agencies.

Branch specialists in the production of poultry and rabbits are located at the Poultry Test Station in Abbotsford. The fields of specialty include chicken broiler and hatching egg production, egg production, turkey, rabbit, waterfowl and game bird production as well as poultry health.

In addition to conducting tests and projects at the station specialists on staff visited hatcheries, producers, processing plants and other segments of the province's poultry industry. Branch staff made 829 farm visits, attended 262 industry organization meetings and participated in 113 seminars and other specialist conferences.

Industry

Problems related to the inadequate quota allocated to British Columbia from the national marketing agencies resulted in some problems in the egg, turkey and chicken industries in the province. As a result, British Columbia imported a considerable volume of all three commodities during the year.

In the processing sector the problems that developed with the closing of one of the larger processing plants toward the end of 1981 required some rearrangement of remaining processing facilities in the province. Expansion of the remaining plants and the development of a new processing plant for chicken broilers provided adequate processing facilities for the chicken and turkey industry during the year.

The only rabbit processing plant in the province became a viable enterprise with the development of a market for rabbits in eastern Canada. At the start of the year the plant was killing approximately 300 rabbits every two weeks whereas at the close of 1982 processing had increased to 2,400 rabbits per week. Some of the rabbits were produced in British Columbia, however, the majority were imported from Alberta, Oregon and Washington.

Turkey

The turkey industry in British Columbia stabilized in 1982 after three years of uncertainty. The largest turkey processing plant in the province came under control of the growers, and production from the plant has been consistent. Prices throughout the year remained stable with the average weighted price to producers for:

—broilers—$1.48/kg
—hens (5.4–9 kg)—$1.50/kg
—toms (9 kg and over)—$1.48/kg

Poultry Branch staff were involved in the development of the duck industry.

Producers continued to be concerned about their share of the market under the Canadian Turkey Marketing Agency. British Columbia allocation of the national turkey production quota is considerably lower than consumption within the province resulting in imports from other provinces. The producers would like to see a greater portion of the market allotted to the consuming province.

Production marketed in 1982 was approximately 9 000 000 kg and the total number of poults placed on farms was 1,695,000, an increase of about 15 per cent over the previous year.

Waterfowl and Rabbits

Poultry Branch staff were involved in the development of the duck industry with the opening of a new waterfowl processing plant in the fall of 1982. Branch staff assisted the owner of the plant in all phases of waterfowl production from the breeding flock to hatching and the grow-out units.

The rabbit industry experienced a stability never known before with the purchase of a local processing plant by the Rabbit Producers' Association. Unfortunately, B.C. producers are not yet able to fulfill the requirements of this plant, and most of the rabbit slaughtered is supplied from outside the province. Any significant increase by B.C. rabbit producers is not expected before the end of 1983.

Branch personnel prepared a manual on rabbit production for publication.

Broiler

Chicken meat production of 37 000 000 kg eviscerated weight was down 10 per cent from the previous year and fell short of B.C.'s national quota of 39.1 million kg. The pressure of imports on an already sluggish market caused this decrease in production while producer prices, which were firm at $1.14 kg all year, dropped to $1.10 kg in December.

The producer's quota for chicken is classified as primary, secondary or class "B" production. Most growers in the Fraser Valley during 1982 were able to grow only primary, and 50 per cent of secondary production. This resulted in partially filled barns throughout the year. There was a significant movement of broiler growers from the Fraser Valley to the Interior. Eight roaster quotas formerly in the Fraser Valley area were converted to broiler quotas and moved into the Interior to supply the processing plant in that area.

The Poultry Branch, in co-operation with a regional economist, prepared a broiler enterprise model for the Fraser Valley, outlining some of the financial aspects of a typical broiler enterprise. Branch staff also published five broiler fact sheets which were distributed through the Chicken Marketing Board to all broiler growers and hatching egg producers.

Egg Production

With more efficient production methods, egg production in British Columbia increased from 58.3 million dozen in 1978 to 62.5 million dozen in 1982.

Some egg grading stations, however, experienced severe shortages of eggs, especially the grade A large size. One station in particular imported over one million dozen eggs up to August 15th, nearly double that imported in the previous year. Another difficulty encountered was the uneven supply of egg sizes throughout the year because of chick placements in the spring and fall. The ministry, in co-operation with the B.C. Egg Marketing Board, is developing a program to deal with this supply and pullet placement situation.

Branch staff, in co-operation with entomologists in the Crop Protection Branch, published a bulletin on fly control on egg production farms. Staff also conducted a survey of egg producers to determine the types of watering systems used on the various layer farms and the advantages and disadvantages of each system.

Poultry Health

No single poultry health problem dominated the industry during 1982. Some problems associated with excessive condemnation in broiler chickens arose as a result of Marek's disease and, consequently, the branch encouraged broiler flock owners to vaccinate their chicks against this disease.

Staff held discussions with the Chicken Marketing Board and the broiler industry in an attempt to establish a broiler health program. The initial stages of this program would be concerned with vaccination programs and serological monitoring of broiler breeder flocks in an effort to improve chick quality.

Poultry Test Station

The branch maintains a modern poultry farm at Abbotsford, for the purpose of conducting experimental and demonstration projects for the production of broilers, layers, turkeys and rabbits.

The following is a list of projects carried out at the test station during 1982:

1. A test to determine the effect of Hemorrhagic Enteritis vaccination on growth, feed conversion, mortality and per cent grade A in turkey broilers.
2. A test to ascertain the effect of the incidence of "flip overs" disease and overall performance in two strains of broilers by varying the levels of antibiotics and ventilation rates.
3. Study of the effect of varying calcium phosphorus ratios on leg problems in two strains of broilers.
4. Tests to measure the differences in the quality of chicks produced by different multiplier breeder flocks in the province. Six of these tests were conducted in 1982.
5. Studies to determine the protein requirements for Leghorns involving three specific strains of birds.

Assistant Deputy Minister Financial Assistance Programs

ARDA Branch

Administration

The Agricultural and Rural Development Subsidiary Agreement (ARDSA) is managed and administered by the ARDA Branch. This federal-provincial program provides joint funding of up to $60 million from the federal Department of Regional Economic Expansion (DREE) and the B.C. Ministry of Agriculture and Food, committed in a five-year period which began August 1, 1977. By mutual agreement, in the spring of 1982, the ARDSA program was extended for a further 12-month period to July 31, 1983. In September, the federal government transferred their responsibility and budget for ARDSA from DREE to Agriculture Canada.

The program's overall objectives are to increase the quality and quantity of British Columbia's food production and to create new employment opportunities in the agriculture and food industry.

ARDSA funds are directed into four key areas:

Part I—Research, planning, training and market promotion to help identify and develop new opportunities for the province's agricultural and food-oriented industries.

Part II—Coordinated resource management—with the co-operation of other resource users—develops the grazing potential of Crown rangelands which are best suited for livestock.

Part III—Primary resource development funds for irrigation and drainage projects which increase the agricultural productivity of land resources.

Part IV—Support service and community development funds assist secondary food processors and the agricultural support services needed to improve rural economic stability and to create jobs.

Program Evaluation

The ARDA program, now in its sixth year of operation, has been under review since late 1981. This in-depth evaluation was conducted to establish a measure of the benefits accruing to date from the many projects carried out, and to determine which types of projects are giving the greatest returns for investments made.

The results and recommendations of this evaluation are now available. This information will be used, in conjunction with a review of agriculture's goals and objectives, to determine the future direction and role for a continuing ARDA-type program in British Columbia.

August 1, 1977 to December 31, 1982		Number of Projects	Total Project Cost	ARDSA Contribution
			$	$
Part I	Research, planning, training and market promotion	59	5,490,911	4,768,259
Part II	Coordinated Resource Development Management (Range Improvement)	103	16,178,003	14,566,266
Part III	Primary Resource Development (Drainage and Irrigation)	38	16,469,872	12,260,826
Part IV	Support Services and Community Development	145	63,336,806	14,699,457
TOTAL		345	101,475,592	46,294,808

New Developments, New Approaches, New Jobs

During 1982, ARDSA funded 27 new projects for a total of $4.45 million. The ARDSA program, since its inception in 1977, has committed $46.3 million to assist 345 approved projects. In turn, ARDSA government funding has stimulated some $55.2 million in additional private sector investment.

These projects represent considerable new land development and increased productivity through drainage, irrigation, and range improvements. New and improved market outlet facilities have increased the efficiency of the B.C. food processing industry, generated export demand for B.C. products and created jobs in the food industry.

Part I—Research, Planning, Training and Market Promotion

Two new research projects were approved in 1982 bringing the total Part I ARDSA commitments to $4.77 million for 59 projects. At year-end, 39 of these projects had been completed.

The two new projects will study marketing opportunities for sheep and lamb within B.C. and for export, and opportunities and risks of linear development. This latter project will cover such issues as the use of pipeline and power corridors for livestock grazing and other agricultural purposes. Both studies will be completed during 1983.

Part II—Coordinated Resource Management Planning

During 1982, work progressed on 57 coordinated resource management plans and community pastures. Work completed included land clearing, seeding, fencing for livestock control, stock watering sites, corrals and rotational management plans to improve the grazing potential of Crown rangelands for livestock production.

With the approval of 12 new projects involving $1,759,541, there are now 103 Crown range areas of the province under multi-use management control and development, using ARDSA funding of $16.2 million.

By year-end, 51 projects had been completed with commitments for 1983 totalling $2.5 million. Proposals for 30 new projects are awaiting approval of funds.

Part III—Primary Resource Development

Main emphasis in 1982 was placed on completing the construction of 20 previously approved projects although six new projects were approved and started. Total funds committed for this section stand at $12.26 million, with 38 projects related to drainage and irrigation. ARDSA funding represents 75 per cent of the total cost, with the remaining 25 per cent raised locally by the benefitting groups.

New projects approved and begun during 1982 included drainage systems for: Kent—Miami Slough, Surrey—Burroughs Ditch, Cowichan—Somenos-Richards Creek. Irrigation systems were approved for: Laluwissin-McGillivray, South East Kelowna, and the North Thompson Indian Band.

At year-end, 35 new projects were being reviewed and cost analysis completed. Priority is given according to value of benefits and payback period. They await availability of funds.

Part IV—Support Services and Community Development

Many agri-business proposals were delayed or deferred during the year due to the uncertain economic climate and the high cost of borrowed funds.

Five new projects were initiated in 1982 to provide improved markets for broiler chickens and spent fowl and to improve veterinary services for livestock in the Robson Valley. Work was completed on 16 market facility projects approved earlier. Under this section, 145 projects have received ARDSA funding of $14.7 million. This funding has stimulated an additional private sector investment of $48.6 million.

Agricultural Credit Branch

The Agricultural Credit Branch administers the credit programs of the ministry which are designed to be of direct benefit to producers. In 1982, the *Agricultural Land Development Act* was repealed and the direct loan program offered under this legislation continued under the provisions of the *Agricultural Credit Act*.

The Agricultural Credit Branch provided financial assistance to farmers throughout 1982 in the following forms:

(a) Provincial government guarantees to chartered banks or credit unions as supplement support security to loans made to farmers.
(b) Reimbursement of a portion of the loan interest costs paid by farmers in 1981 on loans from approved lenders to effectively reduce the cost of farm loans.
(c) Direct loans to a maximum of $25,000 to finance the cost of work and materials relative to land development throughout the province.
(d) Incentives in the form of additional reimbursement of interest paid on farm loans to encourage farmers to participate in specific production programs in the province.
(e) A program of increased interest relief on operating loans in the form of reimbursement for growers in the South Coastal region who suffered losses on non-insurable crops as a result of record rainfall in the spring of 1981.

Guaranteed Loan Program

In 1982, chartered banks and credit unions of the province received provincial government guarantees as support security on 31 farm bank loans. These guarantees totalled $3,559,000. With these guarantees in place, total loans of $10,790,000 were authorized by lenders to these farming operations. Since the inception of the program in 1974, 369 guarantees have been placed totalling $37,360,000.

Five claims were made by lenders and approved under the guarantee covenant in 1982 for a total of $821,262. To date, 16 claims have been made under the program since 1974, totalling $1,277,617.

Agricultural Land Development Assistance Program (ALDA)

Through the ALDA program direct loans to a maximum of $25,000 may be approved for eligible farm operators to meet the costs of work and materials directly associated with land development and improvement. Loans are repayable over a period of 15 years at a fixed interest rate which equates to one-half of the chartered bank's average prime lending rate. Interest rates are established semi-annually on April 1 and October 1 based on the prime interest rates for the previous six months.

In 1982 the branch issued 84 contracts for a total value of $770,269. There were 347 outstanding contracts completed in the year providing loans of $2,736,200. No additional loan requests were accepted in 1982 due to the carry over of uncompleted contracts and the backlog of unprocessed 1981 applications which fully committed the funding set aside for this program. The program was re-opened in January 1983 to accept loan applications and these will be restricted to approximately $2.8 million.

Partial Interest Reimbursement Program

The branch processed 5,640 applications for partial reimbursement of loan interest costs incurred by farm operations in 1981. Benefits of $8,075,000 were paid.

This program reduced the interest costs in 1981 to an effective rate of approximately 18.32 per cent or 1 per cent below the chartered bank average prime lending rate for that calendar year.

Approved lenders in this program are chartered banks, credit unions, Farm Credit Corporation, Federal Business Develop-

ment Bank, the Director, Veterans' Land Act, and the Western Indian Agricultural Corporation Limited.

A total of $70,683,000 has been distributed to farm operators of British Columbia since the inception of this program in 1974.

Special Programs

Grapevine Assistance Program—1978–79

This program was initiated in 1979 to assist farmers in re-establishing grapevines destroyed, or severely damaged, by the winter frost of 1978–79. Financial assistance took the form of a reduction of loan interest costs to four per cent for the calendar years 1980–1982 inclusive based on eligible loans of $2,471 per hectare per year.

Ten farm operators participated in the program in 1982 receiving benefits of $42,002 relative to 1981 interest costs. Through this program, 87 hectares of grapevines are being re-established. Nine eligible participants remain in the program and expect reimbursement benefits for 1982 amounting to approximately $52,000.

Asparagus Production Incentive Program

The Agricultural Credit Branch established a program in 1980 to stimulate increased production of asparagus in British Columbia. Financial benefits for eligible farm operators take the form of reimbursement of all or a portion of the interest costs paid by the farmer over a four-year crop establishment period on those loans contracted through banks or credit unions.

Ten participants are enrolled in this program representing 112 hectares of new asparagus production. Eligible loans are based on a maximum of $988 per hectare in loans upon which reimbursement of interest would be paid to help meet cash costs during the new crop establishment period. Benefits paid in 1982 amounted to $11,004 relating to 1981 loans. In 1983 benefits are expected to be $15,600 relating to 1982 outstanding loans.

Rain-Damaged Crop Program—South Coastal Region

This program assists growers who suffered losses on eligible crops as a result of record rainfalls in 1981 in the South Coastal region. Eligible crops include vegetables and annually seeded forage crops not insurable under the Crop Insurance Program. Financial assistance is provided by reimbursement of loan interest ranging from 4.2 to 8.4 per cent on those loans contracted for operating purposes. The eligible bank loans are based on 1981 crop area that could not be planted or harvested, or areas in production on which non-insurable crops yield less than 60 per cent.

To date, 191 farm operators are registered in the program involving operating loans totalling $10,068,000. Benefits for 1982 are projected to be approximately $450,000.

Crop Insurance Branch

The function of the Crop Insurance Branch is to administer the *B.C. Insurance for Crops Act*. Within the context of this Act, the objectives of the branch are:

1. To reduce the fluctuations in net income of individual producers who suffer crop losses due to weather and other uncontrollable factors.
2. To maintain an effective system for administration of crop insurance programs for selected commodities.
3. To reduce the need for *ad hoc* assistance programs in crop loss situations.

The Canada-British Columbia crop insurance program involves the participation of

the farmer, the provincial government and the federal government.

The farmer and the federal government each contribute 50 per cent of the total cost of the premium involved, while the provincial government contributes the cost of administering the program. The federal government's contribution to the program totalled $2.5 million for 1982. The Government of British Columbia provided all the administration costs for the crop insurance program totalling approximately $0.83 million in 1982.

Participation in the program expanded in 1982 in both number of participants and the value of insurance coverage written. Since the inception of the program, $26,788,474 has been paid in indemnities to the end of the 1981 crop year, and $30,285,474 has been earned in premiums.

Weather

The winter was relatively mild, with good snow cover. There was no significant damage to fruit trees, but some damage was evident to grape vine tops in vinifera varieties. Forage crops wintered well as a result of the good snow protection.

Cooler summer months hampered the development of sugar in grapes.

In the Peace River area, the dry cold spring developed into a drought in early summer and adversely affected germination. August rainfall was nearly double the normal figure. A major hailstorm on August 27th damaged crops from Sunset Prairie to the Alberta border. Harvesting was terminated by early snowfalls.

The Okanagan spring was cooler than normal with several early frosts in the south end of the valley. June of 1982 was the wettest on record and the rains continued well into the month of July causing extensive damage to the cherry crop. Cooler summer months hampered the development of sugar in the grapes.

After a wet spring in the Fraser Valley, the weather improved and all planting proceeded on schedule. Strawberry and raspberry crops suffered some problems as a result of damage sustained during the wet summer in the previous year. Blueberries and cranberries, however, were claim free.

Status of Crop Insurance Fund at March 31, 1982

	March 31/82	March 31/81
	$	$
Due from Government of Canada	—	—
Interest on Fund	(1,359,039.17)*	(219,001.45)
Grain Program	(1,722,059.10)	(1,222,830.54)
Tree Fruit Program	(769,068.49)	(2,510,201.26)
Berry Program	(532,092.56)	(610,607.92)
Grape Program	197,054.25	147,640.87
Forage Program	120,611.85	97,722.65
Vegetable Program	42,457.51	(78,599.06)
Crop Insurance Fund Balance	$4,022,135.71	$4,395,876.71

* Bracket denotes credit.

Note: This statement shows the actual status of the Crop Insurance Fund as of March 31, 1982 by fiscal year and on a cumulative basis. Since the time periods do not correspond, the above figures do not agree with those of the individual program which are by crop year.

Summary of Loss Experience

	Per Cent Loss to Premium 1981	Cumulative
Loss experience for all programs	142.38	98.17
Grain Program	42.65	94.42
Tree Fruit Program	176.57	97.59
Berry Program	132.01	96.82
Grape Program	102.83	115.00
Forage Program	132.46	140.34
Vegetable Program	220.06	114.07

Administration

	April 1, 1981 to March 31, 1982	April 1, 1980 to March 31, 1981
Provincial Administrative Costs	$609,680	$555,445
Federal Government Premium Contribution	2,129,452	1,782,023
Administration Costs to Federal Contribution	28.64%	31.17%
Administration Costs to Total Coverage	1.16%	1.35%
Administration Costs to Total Claims	10.37%	23.20%

Note: Provincial administration costs reflect only the Crop Insurance Branch budget for salaries and travel. No allowance has been made for items such as office space, automobile purchases and accounting which are paid for by other budgets.

Farm Income Insurance Branch

The Farm Income Insurance Branch administers the income insurance program comprised of a number of commodity plans which protect producers against income loss due to low market returns and/or rapidly escalating farm input costs. The plans are based on the insurance concept and require that sufficient premiums be submitted to cover the indemnities paid over the long term. Premiums are shared between the participant and the provincial government. Producer participation is voluntary.

The program was first introduced in 1973 with plans established for 12 commodity groups. All the initial commodity plans were designed for specific five-year terms and have now expired.

During 1982, the branch established a raspberry plan and maintained operation of plans for beef, blueberries, strawberries, broiler hatching eggs, greenhouse vegetables, processing vegetables, sheep, swine and tree fruits. Efforts are continuing to establish a replacement plan for potatoes.

The new raspberry plan became effective in June, 1982 providing coverage for 1981 and ensuing years. Eligible production is red raspberries grown commercially in British Columbia and delivered and sold to a raspberry processor in the province. Fresh and roadside sales are not eligible for the plan. To be eligible producers must ship a minimum of 3 000 kilograms of eligible raspberries in the year of application.

By the end of 1982 there were 4,775 participants registered in the 10 plans and receiving benefits of approximately $38 million.

The farm income insurance program continued to provide a significant level of protection to producers from low market returns or rapidly escalating input costs beyond the individual participant's control.

Participant Distribution by Plan

Plan	No. of Participants Jan. 1 82	No. of Participants Dec. 31 82	Increase (+) or Decrease (−) in 1982
Beef	1,553	1,857	+ 304
Blueberries	129	124	− 5
Broiler Hatching Egg	41	39	− 2
Greenhouse Vegetables	90	84	− 6
Potatoes	Pending	Pending	—
Processing Strawberries	79	50	− 29
Processing Vegetables	41	37	− 4
Raspberries	Pending	124	+ 124
Sheep	130	142	+ 12
Swine	257	267	+ 10
Tree Fruit	1,785	2,051	+ 266
TOTAL	4,105	4,775	+ 670

Farm Products Finance Branch

The Farm Products Finance Branch administers a program of financial assistance to agricultural enterprises engaged in the processing of British Columbia agricultural products. Under the *Farm Product Industry Act*, assistance may be provided in the form of loans, guarantees, grants and by the provision of consulting services.

Financial Assistance

Activity continued at a high level throughout 1982, a trend that started during 1981, reflecting an increasing number of agricultural and food processors experiencing financial difficulties. These problems were generally caused by high interest rates as well as increases in raw material and labor costs.

Requests for financial assistance were received from 52 agricultural or food processing organizations and 34 were examined in detail for possible assistance. Seven proposals were approved for support totalling approximately $1.2 million. At the end of the year there was a total of approximately $5,647,437 outstanding in loans and guarantees.

Direct Financial Assistance Approved During the Year

	Guarantees	Loans	Grants	Total
	$	$	$	$
Pan-Ready Poultry (1980) Ltd.	1,000,000	—	—	1,000,000
Bulkley Valley Agro Development (1980) Ltd.	100,000	—	—	100,000
Association of British Columbia Grape Growers	—	—	48,700	48,700
B.C. Turkey Marketing Board	—	—	10,000	10,000
Roger Clapham, Cloverdale Honey	—	—	6,800	6,800
Island Vegetable Co-operative Association	—	—	5,000	5,000
Ra-Bitco Farms Ltd.	—	—	5,000	5,000
TOTAL	1,100,000	—	75,500	1,175,000

Assistance Disbursed During 1982

	$
Advisory Services Provided by Consultants	133,353.26
Kootenay Dehydrators Ltd., Creston — Interest Reimbursement Grant	91,250.00
Graminae Holdings Limited — 5-year program of seed industry support	36,571.11
British Columbia Fruit Growers' Test Orchard Ltd., Oliver — 5-year program	19,069.75
Ra-Bitco Farms Ltd., Mission — loan for working capital	35,000.00
Association of British Columbia Grape Growers, Kelowna — 3-year program	12,968.12
B.C. Turkey Marketing Board — sharing of study costs	10,000.00
Roger Clapham, Cloverdale Honey, Aldergrove — grant toward expansion project	6,800.00
British Columbia Cattlemen's Association, Kamloops — grant for market promotion	4,800.00
Island Vegetable Co-operative Association, Victoria — grant toward study costs	5,000.00
Sun Dew Foods Ltd., Okanagan Falls — grant toward market promotion	4,000.00
British Columbia Asparagus Growers Association, Armstrong — grant toward promotion project	1,400.00
TOTAL	360,212.24

Guarantees and Loans Outstanding at Year End

Guarantees	Dec. 31, 1981	Dec. 31, 1982
	$	$
Cloverdale Lettuce and Vegetable Co-operative	102,953	59,203
Creston Co-operative Packers	55,619	33,943
Kootenay Dehydrators Ltd.	1,849,485	1,849,485
Pan-Ready Poultry (1980) Ltd.	1,000,000	1,000,000
Scott Poultry Co-operative Association	3,139,236	2,551,806
Sun Dew Foods Ltd.	40,000	40,000
	6,187,293	5,534,437
Loans		
Hodgson Bee Supplies Ltd.	65,000	53,000
Ra-Bitco Farms Ltd.	25,000	60,000
Sun Dew Foods Ltd.	7,500	—
	97,500	113,000
TOTAL	6,284,793	5,647,437

Acts Administered by B.C. Ministry of Agriculture and Food

	Responsibility
Ministry of Agriculture and Food	Deputy Minister
Agricultural and Rural Development (B.C.)	ARDA
Agricultural Credit	Agricultural Credit
Agricultural Land Commission	Land Commission
Agricultural Land Development	Agricultural Credit
Agricultural Produce Grading	Marketing
Agrologists	Deputy Minister
Bee	Apiculture
Cattle Horn	Veterinary
Farm Distress Assistance	Deputy Minister
Farm Income Insurance	Farm Income Insurance
Farm Product Industry	Farm Products Finance
Farmers' and Women's Institutes	Executive Officer
Fur Farm	Veterinary
Grasshopper Control	Crop Protection
Insurance for Crops	Crop Insurance
Livestock	Livestock Veterinary
Livestock Brand	Veterinary
Livestock Disease Control	Veterinary
Livestock Industry	Veterinary
Livestock Lien	Veterinary
Livestock Protection	Livestock
Livestock Public Sale	Veterinary
Margarine	Dairy
Meat Inspection	Veterinary
Milk Industry	Dairy Milk Board
Natural Products Marketing (B.C.)	Marketing
Pharmacists	Veterinary (part)
Plant Protection	Crop Protection Horticulture
Seed Grower	Field Crops
Seed Potato	Field Crops
Soil Conservation	Soils
Veterinarians	Veterinary
Veterinary Laboratory	Veterinary
Weed Control	Field Crops

REGIONAL OFFICES
DISTRICT OFFICES
HEADQUARTER OFFICE (VICTORIA)
PEACE RIVER
FORT ST. JOHN
DAWSON CREEK
CENTRAL
SMITHERS
VANDERHOOF
PRINCE GEORGE
QUESNEL
THOMPSON-CARIBOO
WILLIAMS LAKE
OKANAGAN-KOOTENAY
SALMON ARM
VERNON
KELOWNA
SUMMERLAND
PENTICTON
OLIVER
CRANBROOK
CRESTON
KAMLOOPS
COURTENAY
SOUTH COASTAL
DUNCAN
CLOVERDALE
ABBOTSFORD
CHILLIWACK
SIDNEY
VICTORIA

Offices of the British Columbia Ministry of Agriculture and Food

Victoria:	Minister's Office, Parliament Buildings V8W 1X4	387-3656
	Head Office, 808 Douglas Street V8W 2Z7	387-5121

District Offices

Abbotsford:	205, 33780 Laurel Street V2S 1X4	859-5281
	Engineering Branch, 33832 South Fraser Way V2S 2C5	853-6451
	Poultry Test Station, 32916 Marshall Road V2S 1K2	853-3671
	Veterinary Laboratory, Box 190 V2S 4N8	853-1161
Burnaby:	Dairy Laboratory, 3705 Willingdon Avenue V5G 3H3	434-3326
Chilliwack:	5, 8635 Young Road South V2P 4P3	795-9471
Cloverdale:	17720—57th Avenue, Surrey V3S 4P9	576-2911
Courtenay:	209, 420 Cumberland Road V9N 5M6	338-7465
Cranbrook:	202, 135—10th Avenue South V1C 2N1	489-3521
Creston:	456 Northwest Boulevard V0B 1G0	428-5371
Dawson Creek:	1201—103rd Avenue V1G 4J2	782-5931
Duncan:	238 Government Street V9L 1A5	746-6183
Fort St. John:	201, 9711—100th Avenue V1J 1Y2	787-1111
	Crop Insurance Branch, 221, 9711—100th Avenue V1J 1Y2	787-1111
Kamloops:	162 Oriole Road V2C 4N7	374-3614
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Langley:	210, 20316—56th Avenue V3A 3Y7	530-5381
Oliver:	Courthouse, Box 940 V0H 1T0	498-2420
Penticton:	10, 477 Martin Street V2A 5L2	493-2749
Prince George:	Experimental Farm Site (RR 8), RMD 7 V2N 4M6	963-9685
Quesnel:	208, 350 Barlow Avenue V2J 2C1	992-5591
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Sidney:	Building 20, Saanichton Research Station	
	8801 East Saanich Road V8L 1H3	656-0941
Smithers:	Government Building, Bag 5000 V0J 2N0	847-4411
Summerland:	Research Station, Box 198 V0H 1Z0	494-0401
Surrey:	Food Information Services, Marketing Branch	
	10344 East Whalley Ring Road V3T 4H4	584-7691
Vanderhoof:	Church Avenue, Box 987 V0J 3A0	567-2111
Vernon:	4607—23rd Street V1T 4K7	545-1387
Williams Lake:	540 Borland Street V2G 1R8	392-6261

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